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3dcreative exclusive

MONSTER HOUSE

Interview with VFX Supervisor Jay Redd & Animation Supervisor Troy Saliba



SIGGRAPH2006

>>All the news from the years biggest CG event in Boston

SWORDMASTER

>>Continuing complete monthly tutorial for 3DS Max, Maya, Lightwave, C4D & XSI

TEXTURING MASTERCLASS

>>Cartoon and Stylised Characters part 2 by Siku

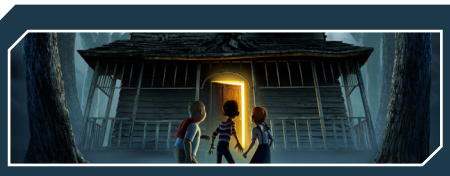
INTERVIEWS

>>With Justin Lassen, Sebastien Schoellhammer & BUCK Studio LA

MAKING OF'S

'Rusty' by Cesar Alejandro Montero Orozco, 'Flower' by Xu Fei & 'Upside-down' by Mathias Koehler

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Sebastien Sonet
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Xu Fei
Mathias Koehler













articles

032 MONSTER HOUSE
We interview VFX Supervisor Jay Redd

045 SIGGRAPH 2006
Full roundup of the CG event of the year

008 JUSTIN LASSEN
Composer and Digital art fanatic

017 S. SCHOELLHAMMER
3D Artist...will travel...

026 BUCK STUDIOS
LA and now New York...

interviews

083 MASTERCLASS
Texturing Stylised & Cartoon Characters Part 3

094 SWORDMASTER
Part 6 : Mapping & Unwrapping

096 RUSTY
By Cesar Alejandro Montero Orozco

106 FLOWER
By Xu Fei

113 UPSIDE DOWN
By Mathias Koehler

tutorials

074 GALLERIES
10 of the Best

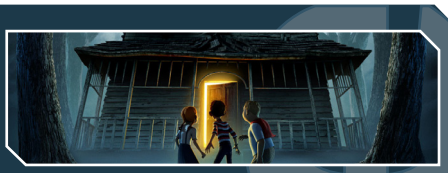
124 RECRUITMENT
Job Vacancies

128 ABOUT US
Zoo Publishing Information & Contacts

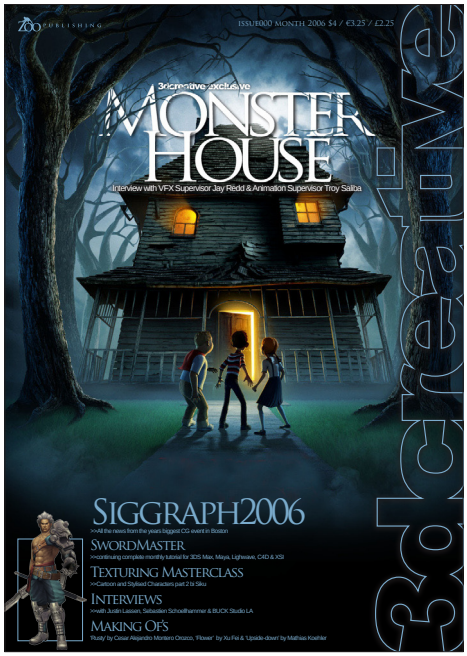
making of's

galleries

recruitment



Editorial Welcome



Welcome

Welcome

To Issue 14. Man, things are getting busy here. Can you believe we have managed to bust over the 200 page mark this month! That's right, 223 pages of content! You cannot get that kind of value for $4 anywhere! If you imagine that most printed magazines are in the region of 80-100 pages, and that a lot of the content is from press releases, then it just makes 3DCreative look even better!

Interviews

We have exclusive content from all over the world and from many different areas of the industry. Take this month for example. We have an interview with Justin Lassen, a composer from Hungary who takes his inspiration from the artwork which we have featured over the last year. You can listen to his tracks by clicking the links in his interview. Also featured this month are Artist Sebastien Schoelhammer and BUCK Studios from LA and now New York, USA.

Articles

The big 2 articles this month are an exclusive interview with Sony Images Pictureworks VFX Supervisor Jay Redd and animation supervisor Tory Saliba. Both who worked on the latest CG blockbuster 'Monster House'. We talk to them about the movie. Also, Siggraph 2006 complete roundup. I know it's a little late but the article is huge! We have nearly 30 pages of news from the recent event in Boston, USA.

Tutorials

The Texturing Masterclass rounds up the texturing of Stylised and Cartoon Characters, Swordmaster is about to get 'Mapped and Unwrapped' in part 6 of 8, and we have 3 great 'making of's' with 'Rusty' by Cesar Alejandro Montero Orozco, 'Flower' by Xu Fei and 'Upside-down' by Mathias Koehler.

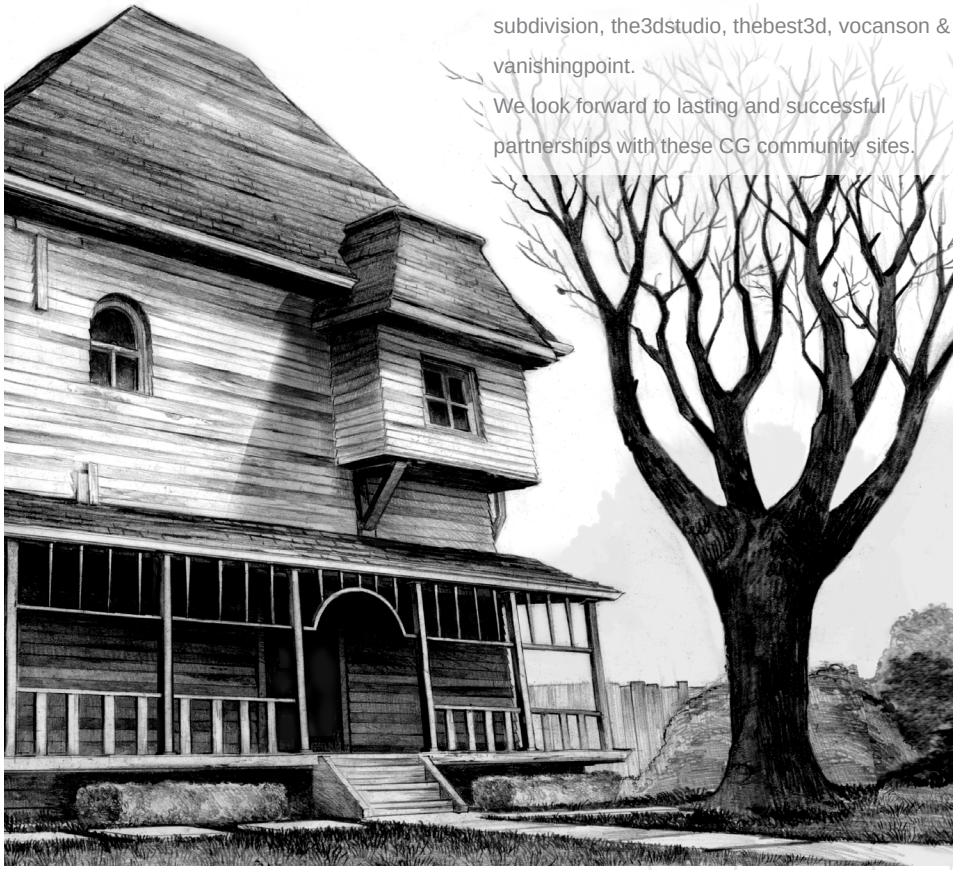
Big Thanks

Just to also let you know, we have many months of solid content in production, always getting that little bit better and bigger. Thanks so much for the support you have shown so far.

About Us

Zoo Publishing is a new company comprising of a small team here in the Midlands, UK. This magazine is our first project which we are hoping, with the support of the community, will build into a great resource and a highly anticipated monthly release. The 'support of the community' is an interesting point, where a 'magazine for 3d artists' is not an original idea, the marketing and distribution of this magazine, as far as we know, is a first. It follows the principle of traditional magazines that are sold on news stands and in many outlets, but being a digital downloadable mag the many established web communities on the net are our outlets and newsstands. 3DCreative is supported by 3dexcellence, 3dkingdom, 3dlinks, 3dm, 3dmonkeys, 3dnuts, 3dpalace, 3dresources, 3dtotal, 3dvalley,123d, ambiguous arts, cgchannel, cgdirectory, cgfocus, cgunderground, childplaystudios, daz3d, deathfall, digitaltutors, kurv studio, max-realms, mediaworks, rendezvous3D, spinquad, subdivision, the3dstudio, thebest3d, vocanson & vanishingpoint.

We look forward to lasting and successful partnerships with these CG community sites.





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MAXON's CINEMA 4D and BodyPaint 3D were called upon by the visual effects and character animation artists at Sony Pictures Imageworks to create the classic cartoon look and feel of "Open Season." MAXON software was used by texture artists, matte painters and look dev artists on everything from characters to rocks in this, the first offering from Sony Pictures Animation.

Have Others Left You Hanging?
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CINEMA 4D
RELEASE 10

When things get grizzly you can count on MAXON's multi-award winning, easy to use, all-purpose 3D workhorse to make your deadlines bearable.

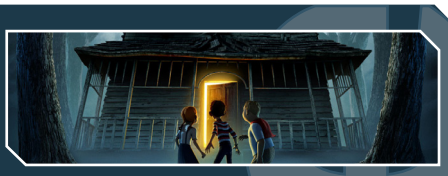
Release 10 roars onto the scene with a new ergonomic interface and redesigned timeline. Produce ferocious character animations with the new joint-based character animation system that now includes virtual muscles. Go wild with industry-standard 3D painting and extended UV editing that is now included with every version of CINEMA 4D. Dominate beastly scenes with the powerful new layer system. And, tons of other enhancements to let your imagination go wild.

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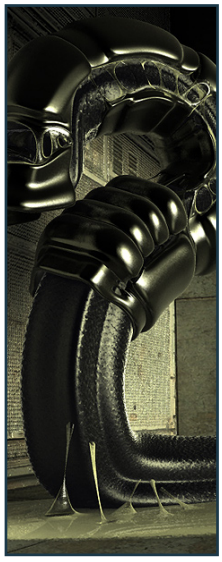
Contributing Artists This Months



Luciano Iurino

I started back in 1994 with 3DStudio on MS-Dos as modeler/ texture artist. In 2001 I co-founded PM Studios & I still work for it as Lead 3D Artist. Recently we have developed the videogame “ETROM – The Astral Essence”. I also work as freelancer for different magazines, web-portals, GFX and videogame companies. Recently I left the 3dsmax environment to move on XSI.

iuri@pmstudios.it

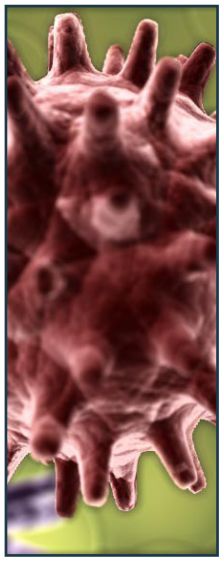


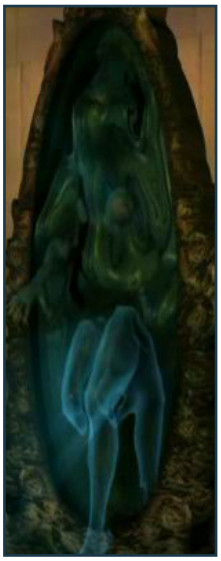


Vojislav Milanovic

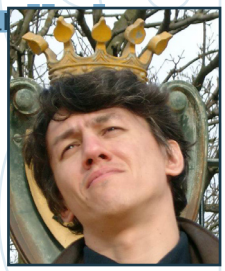
3D modeler, animator, & vfx compositor, Anigraph studio, Self taught all-round 3D guy, started to doodle around in 3D about 8 years ago. In the last 5 years I have done a lot of various things from print and TV ads to gaming & movie graphics. Currently involved in multimedia study & character developing for an animated feature movie. One of my goals is to make my own animated movie

vojo@teol.net http://users.teol.net





Bogdan I. Sumar



3D VFX artist Iasi, Romania. I started back in 1999 with 3D Studio Max but in 2000 trained in Maya. I’ve been a modeller and texturer for few 3D animated movies & two games. Also a modeller, dynamics & particles, lights & render supervisor for many commercials, musical video clips and industrial presentations.

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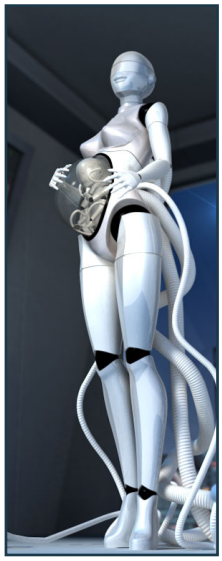
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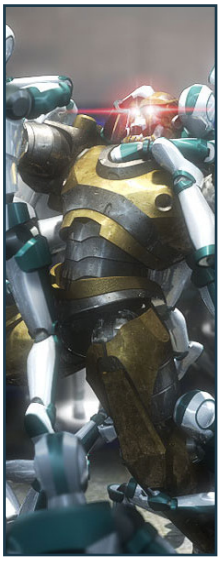


Niki Bartucci

Freelance 3d modeler, Italy. I started working in the field of Computer Graphics in 2000 as an illustrator & web designer. In 2003 I started using 3d software such as C4D & later 3dSMax. That year I worked on ETROM - The Astral Essence, RPG video-game for PC, developed by PMstudios. Currently I’m a freelancer & specialise in commercials. I especially like RPG & RTS video-games.

niki@pikoandniki.com www.pikoandniki.



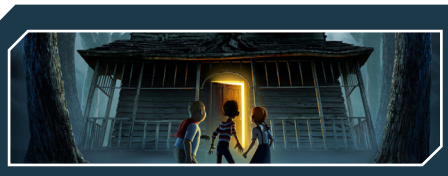


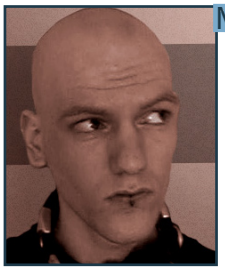
Giuseppe Guglielmucci



Freelance 3d modeler / Animator. I began to use computers with the epoch of the vic20 & Cinema4d was my 1st 3d software. I started working in the field of CG in 1999 in commercial design. In 2003 I worked on ETROM - The Astral Essence, RPG video-game for PC, developed by PMstudios. Currently I’m hoping to work in the video-games industry and develop my own game.

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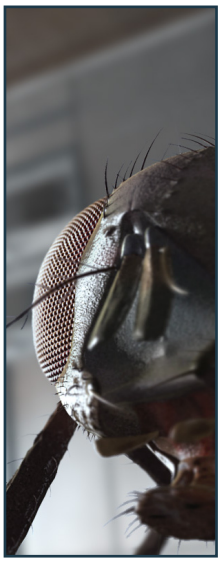


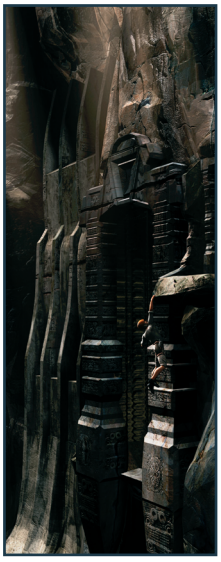


Mathias Koehler

3D artist, Freelancer, Germany. I have been 'doing 3D for about 3 and a half years now. My focus is modelling, lighting & texturing. Through CG I became interested in art in general & I also started drawing. Currently I'm a student of Industrial Design at Braunschweig School of Art. I'm addicted to coffee, books & electronic music.

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Richard Tilbury



Have had a passion for drawing since being a couple of feet tall. Studied Fine Art and eventually was led into the realm of computers several years ago. My brushes have slowly been dissolving in white spirit since the late nineties and now my graphics tablet has become their successor. Still sketch regularly & now balance my time between 2 & 3D although drawing will always be closest to my heart.

ibex80@hotmail.com



Justin Lassen

Composer & Symphonist, USA. Justin has over 9 years experience in the music, film, & game industries. He has produced remixes for Madonna, Garbage, Blue Man Group, Lenny Kravitz, Robert Miles, Nine Inch Nails, Linkin Park, Evanescence, & many others. He has worked on various projects for game & technology companies

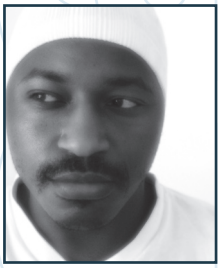
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Siku



Concept artist / designer/comic book author> Fresh from Art College I worked as an advertising visualiser and designer. I then moved on to comics where my work was published for several years in 2000AD stripes under titles such as Judge Dredd, Slaine and a strip I co-created called Pan-African Judges.

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www.theartofsiku.com

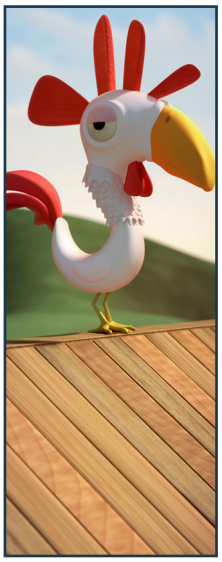


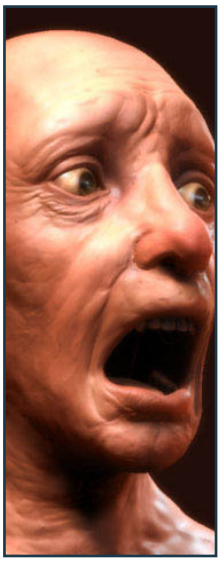
Cesar Alejandro Montero Orozco

3D Artist & Computer Engineer, Mexico. I believe in balance in life, & all of its aspects. I appreciate my health above anything else. I exercise after work & go running. I like up-beat music, to dance, & love clubbing at places where good music is fundamental. I read fantasy books to relax. My favourite drinks are martinis, & chocolate milk!

montero@archeidos.com

www.archeidos.com





Sebastian Schoellhammer



3D Artist/TD, Germany (currently japan) Because I wanted to create computer games, I taught myself programming but later switched to art. After working in games & films for 7 years I became a hybrid of the two - some sort of all round scuipter-model-td guy. I've been travelling for half a year but starting to miss my wacom!!!

sschoellhammer@gmail.com

www.sebster.org

totalTextures

v4: r2

Humans & Creatures

The Original Total Texture collection was created in 2001, utilising the best methods and technology of the time. Since then, techniques and technology have both moved forward, and here at 3DTotal we felt that although the original collection is still widely used and highly regarded among artists and studios of all calibers, it was time for an update...

This enormously improved version of the original texture collection now contains 272 individual Materials, comprising of over 938 individual, hand crafted texture maps. Every Texture now has its own unique colour map, bump map. There is also over 50 new alpha and 100 new specular maps.

What's new?
This new collection consists of 272 materials, comprising of 938 individual maps!! (Colour, Bump, Specular and Alpha maps). We have also included 36 psd files for some of the textures, allowing you to customize some new textures of your own.

DVD Contents:
31 Creature Eyes
11 Creature Furs
2 Creature Miscellaneous
6 Creature Scales
14 Creature Skin (Body)
27 Creature Skin (Facial)
16 www.3d.sk images
16 Human Eyes
2 Human Hair
12 Human Misc (Body)
24 Human Misc (Facial)
47 Human Skin (Abnormal)
2 Human Skin (Old)
13 Human Skin (Tatoo)
34 Human Skin (Young)
15 Human Skin (Reference)



15 Collections of amazing Textures

For full information and pricing including discounts of up to 25% visit www.3dtotal.com
Existing v4 owners can get the new upgrade for only $29 usd!

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Composer and CG Art fanatic Justin, talks to 3Dcreative about his latest symphonic suite 'Synaesthesia'. Amongst other things, Justin Composes music, drawing inspiration from well known CG 3D and 2D works of art from all over the world. 3DCreative magazine has been given the opportunity of exclusively showcasing 8 new pieces in the 'Synaesthesia' suite. Click on the images in the interview to hear the music inspired by them (internet connection required).

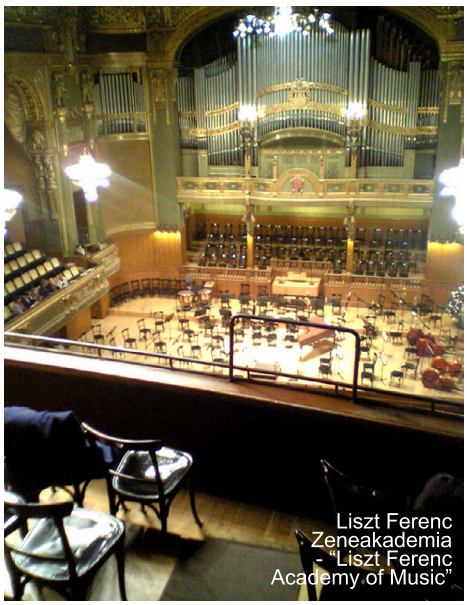


JUSTIN LASSEN


Művészetek Palotája - "The Palace of Arts"

Hi Justin, Thanks for talking to us today. Please tell us a little bit about how you got started in music?

Musically, I first started in choirs during my primary school years. I would sneak into the auditorium each day to play the grand piano. By the mid-90s I started more seriously with MIDI and digital technology, and began to release my music on the Internet's first revolutionary distribution system, MP3.com. I'm not talking about the new site owned by CNET, which seems very celebrity-centric. In MP3.com's hey-day it was a brilliant music network for young, up-and-coming musicians that really allowed me to get my music out to my early fans on a scale that never would have been possible without it. It's sad that today music distribution and social networking sites like MySpace are so focused on making money for their investors that they have lost touch with their indie roots and are becoming more and more commercial. MP3.com in 1997 represented, for me, the golden days of MP3 technology. I released several albums via that website spanning all kinds of genres, millions of downloads, and garnered write-ups in a number of big magazines. Today, I have evolved considerably and found my niche in video game, gallery, book and film scoring.


Liszt Ferenc Zeneakademia - "Liszt Ferenc Academy of Music"

You have been composing for a while, what attracted you to this idea of creating soundtracks for still images?

I have been working in the video game industry since 1996 (I got my first job at Interplay, thanks to a dear friend whom worked there and believed in me. He gave me chances at design documents, audio spec work, graphics, layout, web design and so on. He has since, passed away, but I am grateful for everything he did for me in helping me to become who I am today.) , so writing music to images, concept art and videos has been a part of my day to day life for several years. However, the inspired idea of more seriously writing for still imagery as an art form, rather than cueing for titled scenes, came about when I first laid my eyes upon the landscapes and characters of Linda Bergkvist several years ago. It was pure magic. I could feel what her characters were feeling, and feel the ambience of her scenes so clearly, as a composer and also as a human being. From that point, I became addicted to feeding this new found hunger for writing music to compelling landscapes and images. I have since, met and befriended a lot of sincerely incredible artists and people over the years. For that alone, it is worth every moment I spend searching the net for the next great digital artwork.

All of the artists involved have commented on how well the music you compose suits the mood of the particular scene, how do you achieve this?

Environment. I think what a lot of people forget, is that music is not just what is in the foreground (the notes, arrangements, speakers, headphones, etc.), But what is also in the background. I believe wholeheartedly that it is the 'room' that performs the music. I see the environment whether it be a dark cellar or even a giant palace as the instrument that ultimately performs the music. I think that is why ancient buildings like Cathedrals in Europe have such beautiful reverb. The architects knew. It makes a pipe organ shake your chest, or a choir sound like angels. Reverb, if done right, can bring a scene to life in so many ways. For me, I like to create a mix of live instruments and performers and digital instruments and performances; meshing them together in creatively mixed



THE DEEP ALIEN

By Olga Antonenko

WEBSITE

Click Image to Listen

ways. I also prefer to mix a wide variety of reverb techniques, including capturing my own 'reverb' impulses from live locations, in order to re-use them within the digital realm later. This helps for final cleanup, but also maintaining an original reverb that isn't a typical factory preset. With that said, I place myself within their scene and try to think how the music would sound if it were performed live in their world. I tailor the reverb pretty intricately to fit into their setting, beyond just picking a preset. I have my own nice collection of impulses that I've made over the years. I was also the boy with headphones on, on long walks, syncing the people and places around me with the music that was playing in my headphones. What fun it always was, to slow down time if I felt like it, or speed it up, all with the power of thought, sound and images.



ASCENDING THE MINES

By Bjorn Borkur Eiriksson

WEBSITE

Click Image to Listen



Justin Lassen an interview with



Hungarian National Theatre", "Garden Maze



Budafoki Római katolikus templom
The Organ, Roman Catholic Church of Budafok

You have shown a real interest in this digital art realm, is this something you think you would like to do, other than composing?

Before I was a composer, I was quite active in the digital art world. However, my personal work wasn't nearly as good as most of the artists that are out today. I decided to stick with something that came more naturally to me; music and project leadership. I use to be heavily into 3D artwork, learning all kinds of applications as a child and even watching today's best applications grow up to the advanced versions that exist today. What I always loved most, was animating cameras and pacing movement of scenes and objects. Today if I was to get back into 3D and digital artwork, I would probably fit better as an Art Director, CG Animator or Landscapes, more so than I would as a texture artist, modeler or concept artist. This and many other reasons are why I have so much respect for the varying styles and roles of artists. I do toss the idea around, about getting back into the game. Who knows?

Do you ever intend to work with moving images, such as CG movies for example?

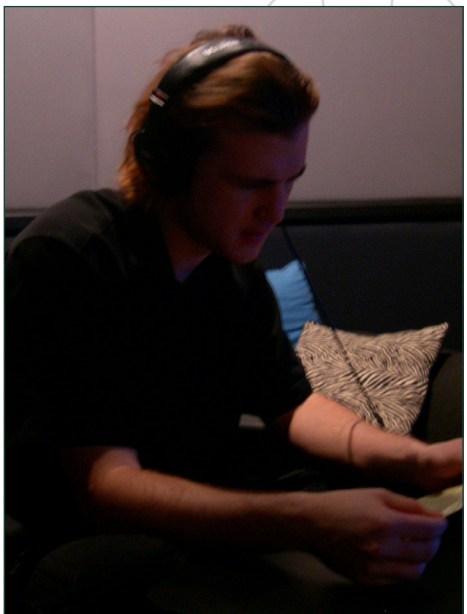
I have wanted to get into moving images and CG movies for years now. Though, only for the right reasons and with the right people. I am not (and never have been) interested in becoming a part of any project that crosses my path. I want to pick artists and teams that truly have a unique presentation, story and disposition. Something that will be remembered. I still believe in quality over quantity. An example is that it has been over 3 years since my last symphony. There are certainly artists in my own backyard that I'd like to get projects together with. The kinds of projects I've been keeping my eyes on are smaller DIY things like 'The Cathedral', 'Rust Boy', 'Honey', and a bold assortment of others. I'd very much like to get involved with Mark Osborne again (previously I completed an orchestral remix for his short 'More' film) if he should happen to work on another great short animation, I'd jump on board!

You have had a lot of interest in your music from within the digital music industry, how did this come about?

Luckily I have had a bit of a grass roots start in my growing accomplishments. I'm a bit of an obscure composer who mostly gets around via word-of-mouth more so than traditional marketing. In fact, I'm pretty amazed at how fast I've grown over the last three years in particular. I am completely grateful to everyone who has downloaded my 1st symphony 'And Now We See But Through A Glass Darkly', I do believe that has had a lot to do with getting the word out, since it was free after the initial 1,000 copies sold out in the first month (September 2003). The various server stats and locations that my symphony has been up for download has an estimated final unique download count of 4.5M~ full downloads (35-minute symphony). This is pretty impressive from an obscure independent artist... I think I can learn from that, to never-underestimate the downloading power of dark classical fans. My name has popped up in quite a few forums, with their friends recommending my music to their other friends and so on. I love how inspired and open the dark artist community in particular has been with my music. As they say, "the first ones always free"... I am hoping with the release of my 2nd symphony later this year that those who downloaded the first symphony (for free), will think of purchasing the second one. I have worked very hard the past three years to complete it in several countries, studios, orchestras and environments. It is called 'A Suite of Grimm In The Mind Of The Darkly Inclined'. It is already completed and is



Intel Centrino Mobile Studio Setup, Hypersonic-PC "Aviator MX6", Behringer "UMX25", Altec Lansing "XT1"



"Recording" HeadPop Studios, Chandler, AZ



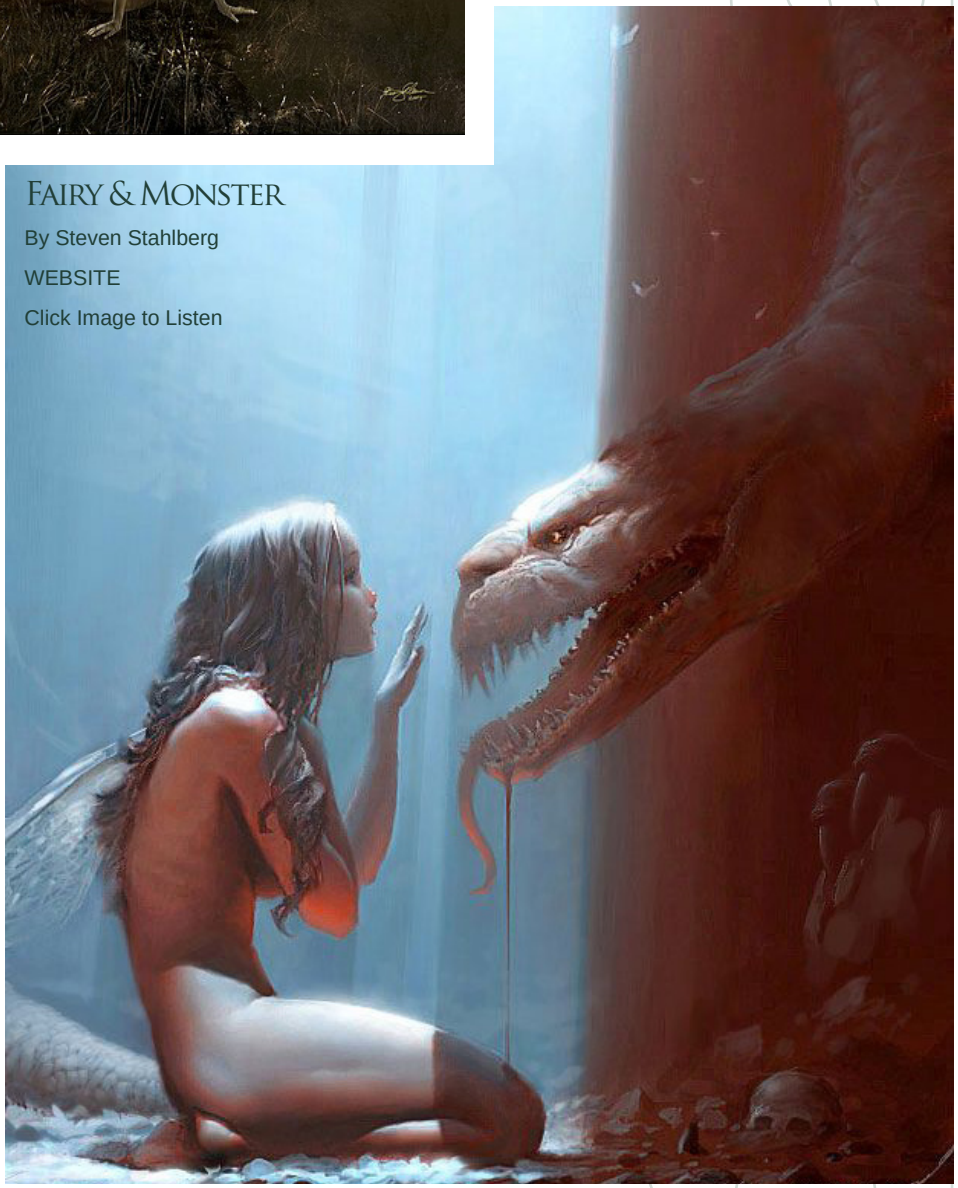


the Foley work to the dailies screaming at you six hours a day, I think when you are a part of teams like that (which don't give up), you can go to sleep knowing you made something wonderful, and I dream to be a part of teams like that in the future, or leading such teams. In particular I am really good at the management and leadership parts, for various departments. While I am a composer, I've also assembled teams, completed demos and presented pitches to film and video game companies over the last several years to some moderate successes. The entire process is intoxicating and worth every drop of blood, sweat and tears. If it's not hard to do, it's not worth doing.

undergoing final mix down, mastering and order as well as cover and booklet artwork. It should be out by December 2006!

What inspires you, creatively or emotionally?

Myths, legends, fairy tales, storytelling, biographies, documentaries, travel, movies, artwork, as much of that stuff as I can possibly cram into my little brain. I think I'm mostly inspired by the idea of leaving some sort of legacy behind by teaming up with other great artists and collectively working on a few great pieces of finished production (or two). A great example of this, is that my favourite part of DVD's, are the 'behind-the-scenes' sections. I love hearing the stories, and the camaraderie between everyone on the team, from the sound guys to the art guys, actors, directors, writers. The entire process is amazing, satisfying and fulfilling on a creative and emotional standpoint. Three of my favourite behind the scenes DVD's are 'Lord of the Rings', 'FireFly' and 'LOST', it must have been so much fun to work on those films, and not even just the glamorous parts or being on the set, but also the not-so-glamorous parts. Everything from the budget sheets to





Justin Lassen an interview with

We have been lucky enough to have the exclusive first showing of your new tracks for artists including Olga Antonenko, Björn Börkur Eiríksson, Kirsi Salonen, Linda Bergkvist, Steven Stahlberg, Blaz Porenta & Nykolai Aleksander. How did you get involved with these artists?

I have known some of them for years, and others I have just begun to know their artwork. I like to get involved with artists that have something magic, something profound and unique, not only on a creative level but also an emotional level. This time around, my level of involvement with each of them is varied: For example, I just met Kirsi Salonen, and found that we both have contagious respect for 'Labyrinth', 'Dark Crystal' and other magical 2D films, and we both miss the fantastic days of traditional animation, her image made me think of those kinds of films, like 'The Last Unicorn', and 'Secret of Nihm', and when I told her this, she replied with much of the same thoughts. Now there is an artistic connection that hopefully can last for much longer. Steven Stahlberg and Linda Bergkvist are examples of artists I have known for years, whom have both touched my creativity quite a bit, and somehow keep my own magic from dying. Nykolai Aleksander did a digitally painted portrait of me in 2004, that was absolutely exquisite, and from that point on, we have stayed connected. I think through artists sharing their artwork with one another, amazing friendships happen and we can help one another get through good and bad times. I love gifting artists with music for their paintings and the reward is to hear them light up each time I present them with it. Each composition has the potential to be something greater (perhaps a finished CG film?), but is in at least one sense, a beautiful way to start a new friendship, or keep an old friendship alive.



THE CASTLE SCREAMS AGAIN

By Blaz Porenta

WEBSITE

Click Image to Listen



GONE

By Linda Bergkvist

WEBSITE

Click Image to Listen

Dream project?

I have some magical seeds in the palm of my hands that if I plant in the right kind of soil, and

give them enough clean water, they will grow to be glorious beautiful revolutions. Deep down I knew these seeds were important so I had them appraised by respected and wise gardeners whom have created other great gardens in the past. I have shown these mysterious seeds to a few select people below, above and inside the film, video game and music worlds, and all of them conclude that the seeds are very special. So special in fact, I have even had one or two of these seeds taken from me, from sneaky gardeners; while I was sleeping, for mine are ahead of their time. Though, the ones that I have remaining are safe in my little music box, with the key around my neck. The kinds of rich soil and nutrient filled water needed for these seeds to grow far outweigh what my current pockets can afford. However, I hold onto these dreams in a realistic and proven way under warm fluorescent lights, waiting for when the weather is right to venture into the garden. These seeds will be beautiful trees one day, for I will get my hands on the enchanted soil and feed both the seed and soil the precious water it needs. My dream projects tend to be rich multimedia global projects, spanning different mediums. They are all quite elaborate, and ripe for the picking. I cannot say too much about them, but I do know they need a breathtaking team of artists, magicians, dark wizards and lots of heavy lifting, nurturing and patience. If any adventurers or warriors are interested in finding out more, do not hesitate to contact this humble gardener.



"Photo by Hal Bergman, Artwork by: Daniel Rolli"

What is the meaning of 'Synaesthesia'?

The dictionary kind of sums it up:

syn•es•the•sia also syn•aes•the•sia *(sns-thzh) Pronunciation Key n. A condition in which one type of stimulation evokes the sensation of another, as when the hearing of a sound produces the visualization of a colour.*

I think all artists naturally deal with different varying levels of synesthesia. In my case, it is intense visual stimulation that directly translates





MYSTERIOUS LADY

(Sylphide Sketch)

By Nykolai Alexander

Click Image to Listen

into emotional audio, and I must work quickly to get the audio ideas from my eyes to my head through my fingers. I read concept art, like a pianist would read notation. Though, it is more diverse and more improvisational than standard notation, as it depends on the artists' intent and words as well as an assortment of other things, like environment, expression and performance. Sometimes a painting will sing to me, other times it will scream at me, and depending on which palette of colours and shapes that the artist decided to use, determines the intensity and emotional quality of the finished work. Gaussian Blur and Reverb go hand in hand, for a direct example. Though, not all visual imagery works this way. It helps to have a bit of a seventh sense in knowing if the piece is actually finished and a genuinely perfected work of art, or if it is merely a test piece or experiment in an artist's growing portfolio. A composer can write music to any image or moving picture, and this is known as 'scoring', but to write from synesthesia, it takes a bit more involvement, in placing yourself in the scene, and through imagination and synesthesia, you can make the image four-dimensional in an audible sense. Sometimes you can find something in-between, but when I do find the special image that will inevitably turn into an opus or synesthesia piece, it is pure magic from start to finish.

Could you give one piece of advice to any of our readers who feel the sudden urge to become the next Justin Lassen?

Stay inspired and NEVER relent; resistance is futile.

JUSTIN LASSEN

Composer & Symphonist

Nihil Studios

Los Angeles, CA

jl@justinlassen.com

http://www.justinlassen.com/

Interviewed By : Ben Barnes

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- Chris Ford
Business Director, Pixar RenderMan



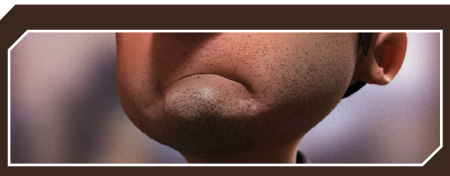
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Sebastien always had an interest in art, envying all the real artists. The one thing he knew once he got a computer was that he wanted to create video games and 3D models, now after so much modeling even his drawing has improved somewhat!
Sebastien
Schoellhammer

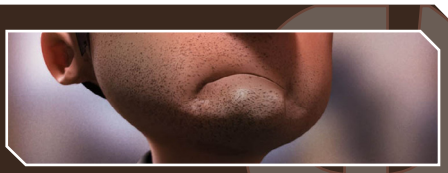


Sebastien Schoellhammer



Hi Sebastian, did you have any prior interest or schooling in the art world, before getting your first computer?

That's an interesting one. Of course I always had an interest in art and I made many feeble attempts at drawing, envying all the real artists. In fact I am coming from a more technical background. The one thing I knew once I got a computer (and after playing some Monkey Island, Ultima and so on..) Was that I wanted to create video games! The only way back then was learning to program - so actually I've been a "coder" for many years. All I managed to do however was small little games with my big ideas never getting done. That was about the time when the first "mods" came about so I decided to get into art to make games that way. Now after so much modeling even my drawing has improved somewhat!

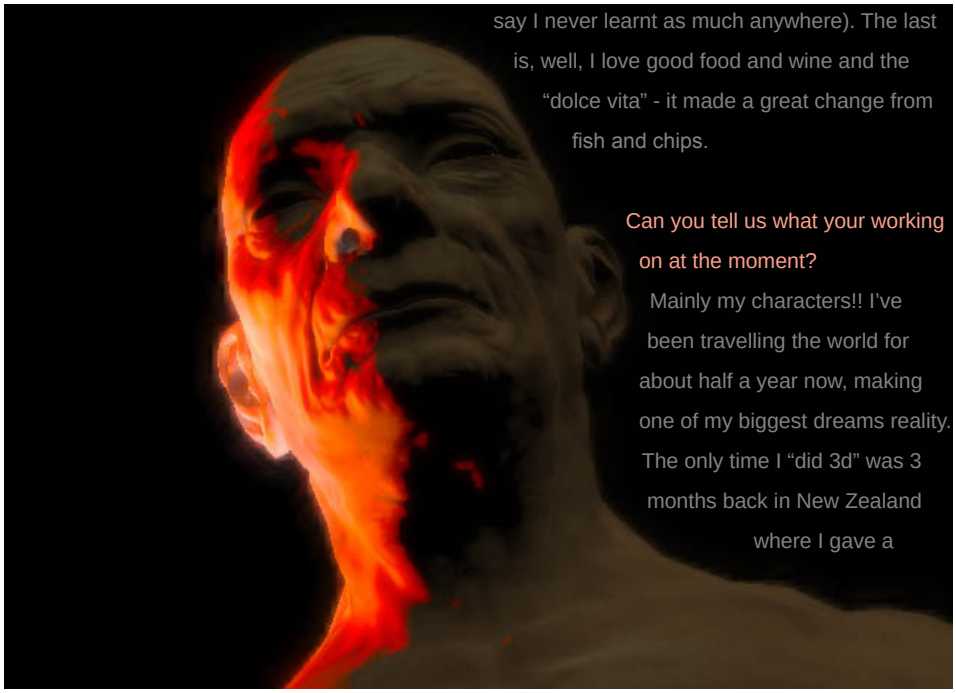


Sebastien Schoellhammer an interview with



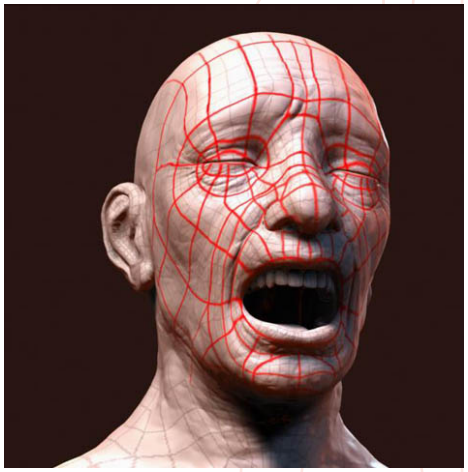
You have work for one of the biggest names in the UK's games industry. So what made you take the leap and head off to Milan and work on the animated movie 'Dear Anne'?

I spent around 3 years at Lionhead Studios working on Black&White 2 before I left for the "Dear Anne" project leaving the game unfinished. This was a very tough decision for me but there were just too many advantages to the new environment! First of all it was to be my first "Film-Project" (even though art in films and games are very similar these days it's still a different league). Then of course there were many BIG names on the project.. Steven Stahlberg, Jonas Thornqvist, Ulf Lundgren just to name a few. So a great opportunity to learn and improve myself (and looking back I must say I never learnt as much anywhere). The last is, well, I love good food and wine and the "dolce vita" - it made a great change from fish and chips.



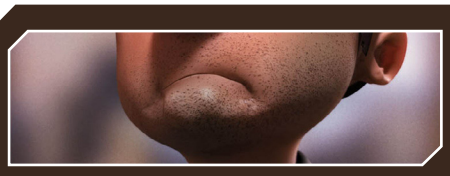
Can you tell us what your working on at the moment?

Mainly my characters!! I've been travelling the world for about half a year now, making one of my biggest dreams reality. The only time I "did 3d" was 3 months back in New Zealand where I gave a modeling-talk at the Wellington University of Art. I had to do it just now to get too rusty - in fact while travelling I miss work a lot, as crazy as that sounds. There's so much I see and inspires me but I can't do anything! Poor me, what? Well I'm taking as many photos as I can.

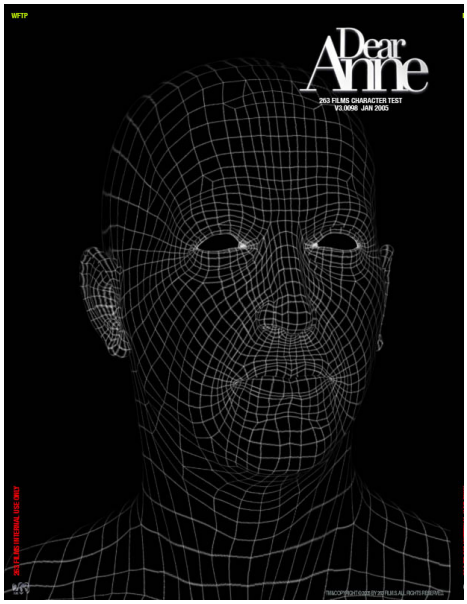


Do you see there being any benefits or effects on your work from taking a break and travelling the World?

I think personally that everybody should do what I am doing if there is a possibility. Even this half year has immensely broadened my perspective and I've seen and learnt so many things.



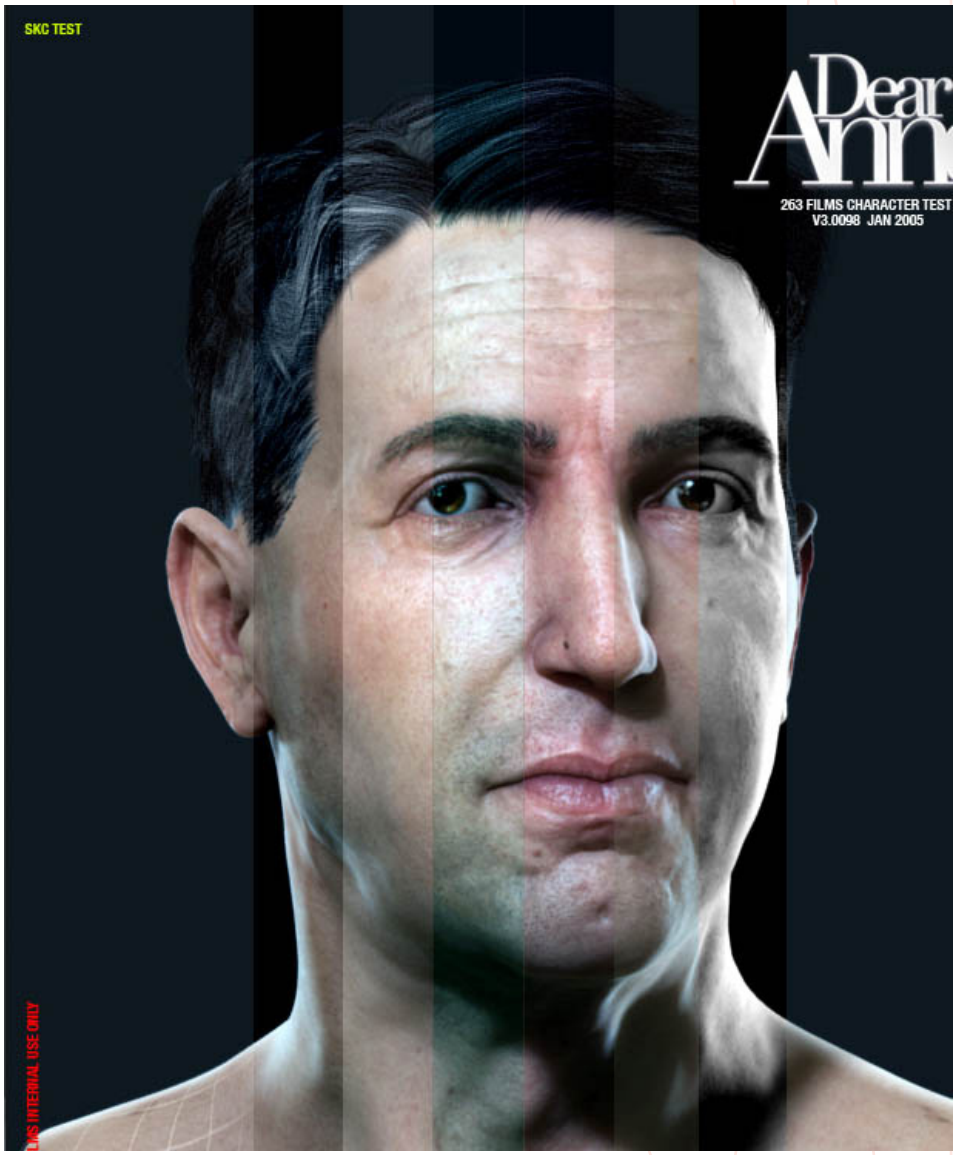
Exploring the world yourself is just a different thing than watching stuff on TV or reading it up. The down side might be that you kind of get out of touch with what is going on in the “3D World” but in the end it never changed that much anyway. More useful tools of course, things get easier but more complex at the same time. And I bet there’s still no complete rewrite of 3ds max... (can’t wait to get my hands on Mudbox though!)





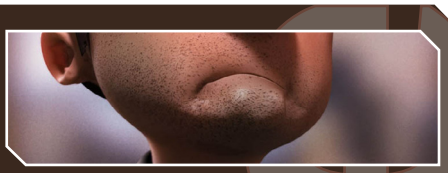
Looking over your portfolio, you have created a host of interesting characters. How do you come up with the initial concept for them?

I love fantasy! I guess you can see that - Elves, Orcs all that. I read Lords of the Rings and many, many other fantasy books. I also like hiking and going into nature, that’s where I think and ideas come to me. Anyhow – once I have an idea I normally start with sketching around (my skill is sufficient for that!) And once I’m sure I like it I start modeling pretty quickly and “design in 3d” with simple shapes and play with proportions. Once the character has taken more shape I often take screen-grabs and make over-paints in Photoshop - I also love the “Liquify Tool” for quickly experimenting with form. Maybe not the most straightforward design process - but I like it!



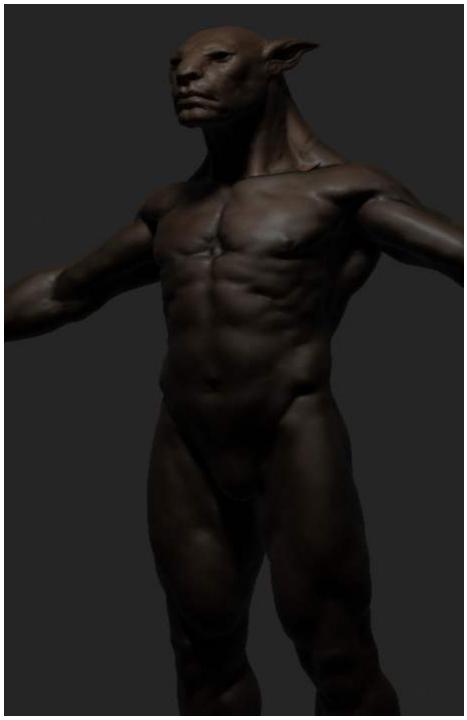
What is it about character modelling that has lead you to base your whole career around it?

I love modeling, that’s for sure and character modeling especially. The great thing is that I can fully concentrate on one entity and finish it off - nudge and push it until it’s perfect! I didn’t do many mechanical things and I don’t enjoy it that much too be honest. Too many bits get me confused (and characters are far more interesting anyway!) I am not, however a modeler only. The small size of the team on “Dear Anne” required everybody to do a host of things and I enjoy all of them! Probably the best job description would be “Technical Artist/Director”. I wrote many pipeline/modeling





tools, worked on Mental Ray shaders, did some rigging, shading and lighting. My programming background always helps a lot with this and I can recommend to everyone to learn some scripting at least. It gives you power!!





So with having this experience with Dear Anne, do you think the job selection will now open up more?

Well, I hope so!! Apart from having good work in your portfolio it's just as important to have a lot of "industry experience" - especially for a good salary! I also met so many fine people and a friends recommendation can count incredibly much in this business.





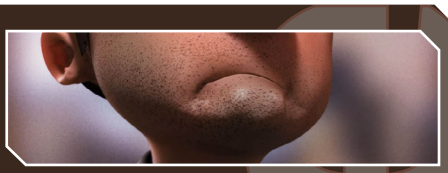


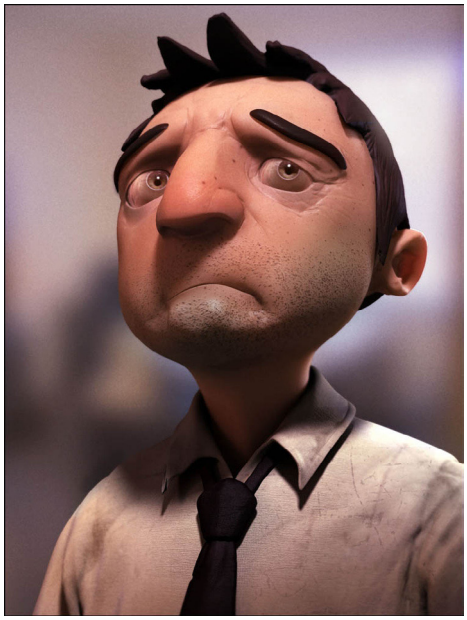


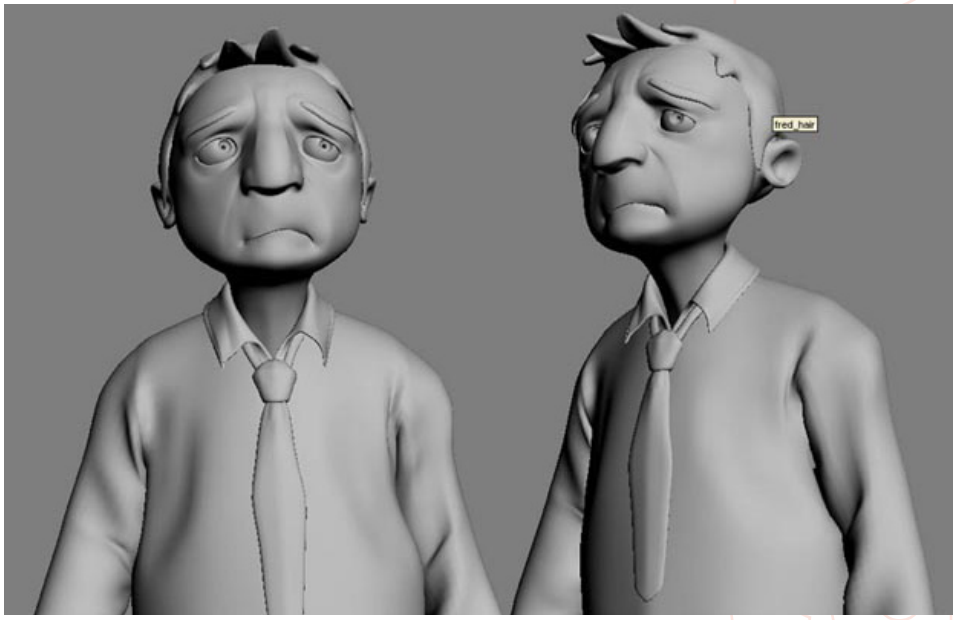
What would be the most coveted project you would like to work on?

Difficult! My big dream was always to work on Lord of the Rings but when the time came I couldn't go and now it's all finished. "The Hobbit" would be awesome - I'd love to work on that but as far as I know it will be a while until P.J. (Peter Jackson) will go ahead with that. Right now I am in Japan and I'm trying to get into an animation company here (there's plenty!) - just for the experience really. Whatever I work on - some "meaning" would be great (another thing I liked about "Dear Anne"), apart from being a creative mission with lots of great people on the team. Or something with dragons - that's my weak spot!

Since you mentioned Lord of the Rings and The Hobbit, did you manage to head over to Weta whilst in New Zealand?













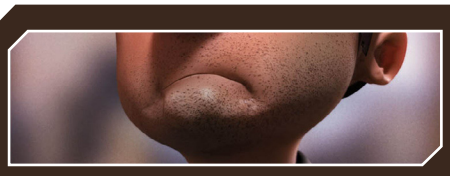
I have some friends there and we met up for drinks but due to bad timing I had no chance to visit the workshop. Sniff, but hey after watching all those making off DVD's a couple of times I know the place pretty well anyway!

What have been your major influences over the years?

"Brian Froud" has been a great influence almost since I started doing art. I've got the book "Fairies" and I loved "The Dark Crystal" and if you look at my work you can see definitive similarities there (yes, pointy ears!). Brom and Frank Frazetta are also some of my favourites. Of course other artists from the community are an influence, there are so many great people out there! I remember now that Taron was one of the first "idols" - when I look at his first works now they still look great and must be like 7 years old. One big proof for me that it's not just the tools that make good art. Also as I said before I love travelling, seeing completely different cultures gives me lots of ideas.

So apart from travelling and creating amazing salads, what else do you do in your free time?

I like reading, watching films, listening to music (and audio plays!) And all that! Properly geekish behaviour! Before I left I started learning guitar but you can't really call it 'playing' yet! Then there's horribly many Japanese characters to learn - just a couple of thousand more.. and then of course personal art! Busy, busy!



So how do you make the best salad on the planet, and what goes into them?

It's secret of course! No, in Italy I've lived mostly lived off salad just because it's so easy and quick. All you do is throwing lots of tasty things together and you have a great and healthy meal! Then there's a special ingredient of course, a special vinegar I've only seen there so far - the flask actually looks like a magic potion, its expensive but it makes every salad incredible. Seek it out!

Well its been a pleasure talking with you and I hope the travelling goes well.

Likewise, I'm hoping to see a printed version soon!

Sebastien Schoellhammer

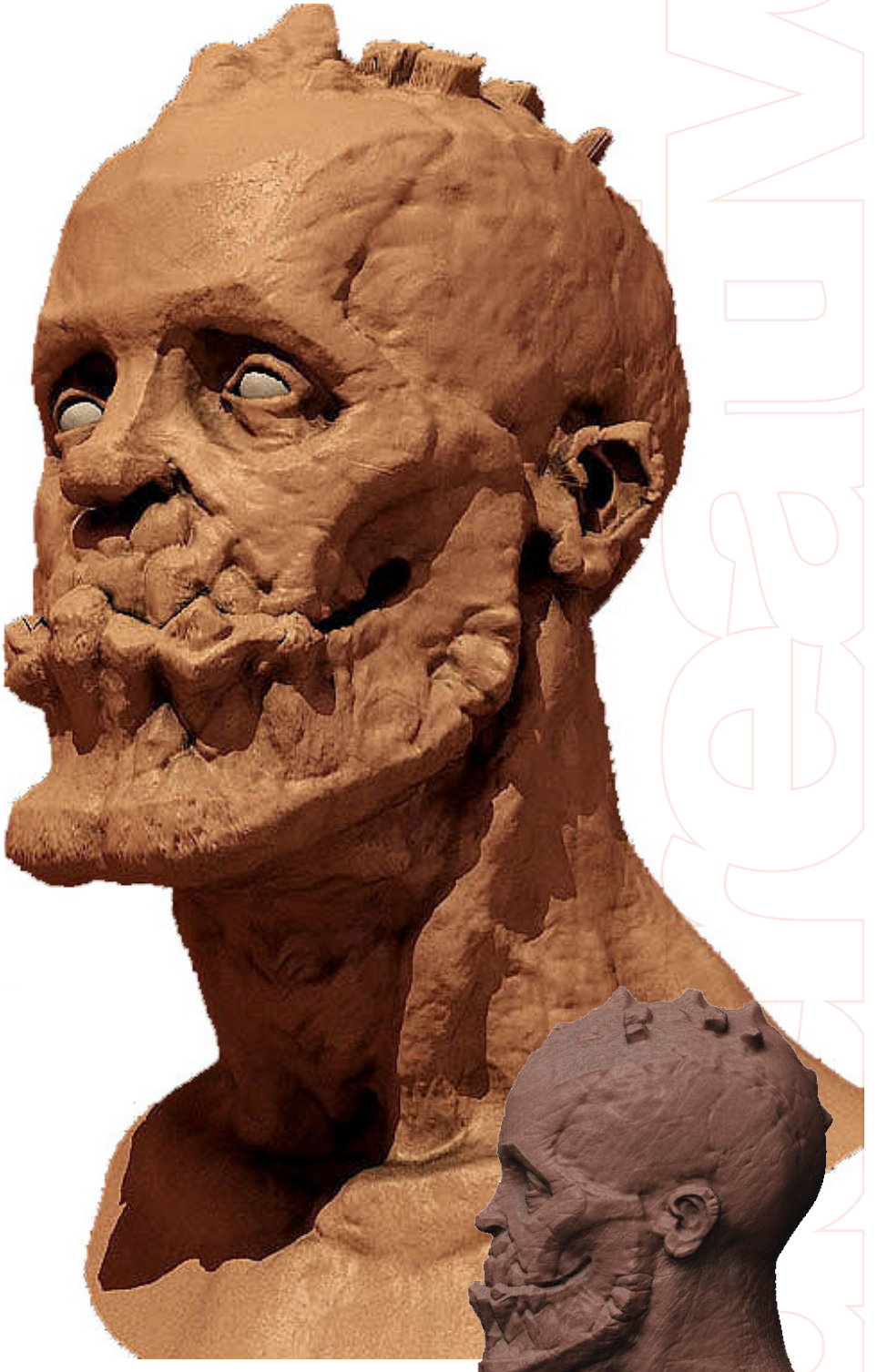
For more work by this artist please visit

www.sebster.org

Or contact them at

sschoellhammer@gmail.com

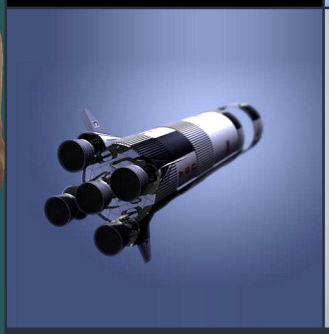
Interviewed By : Chris











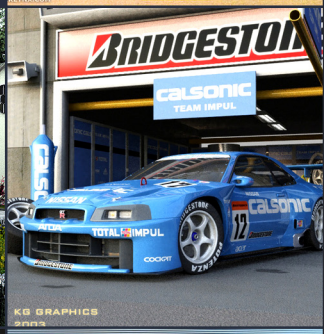



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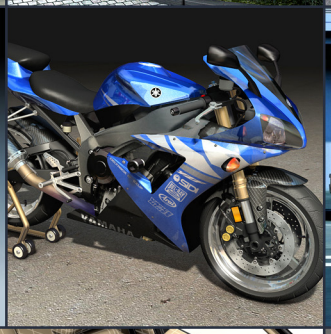
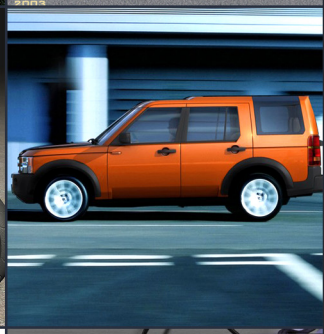
3d02.com. Commonly known as a high quality 3d model store, one of the premier stores of digital assets offering ready to use CG 3d models, and an open platform allowing artists to publish and sell their 3d models online

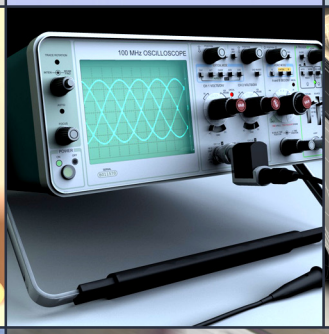




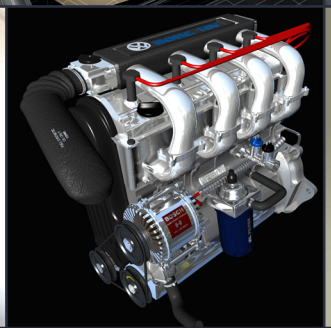







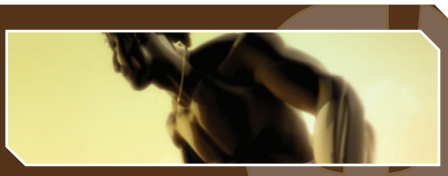





INTERVIEW WITH BUCK STUDIOS

Buck was founded in the Spring of 2003 in Los Ängēles by Ryan Honey, Jeff Ellermeyer and Orion Tait. Now they are a 30 plus person design driven creative company with offices in New York and LA.



Buck Studios an interview with



Hello Buck Studios! Can you give us a quick introduction, tell us when you were founded, where you are based and what kind of monster you have grown into!?

Buck was founded in the Spring of 2003 in Los Angeles by myself (Ryan Honey), Jeff Ellermeyer and Orion Tait. Now we are a 30 plus person design driven creative company with offices in New York and LA.





Your show reel work appears to be a mix of 2d, graphic design, live action and 3d, do you have separate departments or specialists for each of these?

We are focused on doing creative that is right for the product, brand and/or concept so our work is naturally diverse in its execution. With this approach in mind and considering our size, we don't have separate departments, but people that specialize in 2 or 3 of these fields.

Are you always on the lookout for new artists to join your team? And is your intention to keep on expanding?

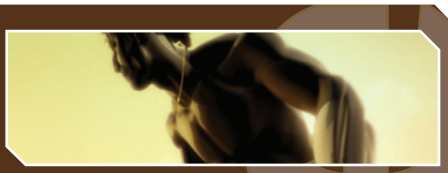
Our intention is to keep expanding. The hope is to staff both New York and LA with around 20-30 people. We feel that if it gets much bigger than that in one office you start to lose some things that we really enjoy. That being said, if we have the right leaders I think we would be open to offices in other locations.





Can you very briefly describe the process of a typical project from pitch to completion, i.e. the stages and departments it goes through?

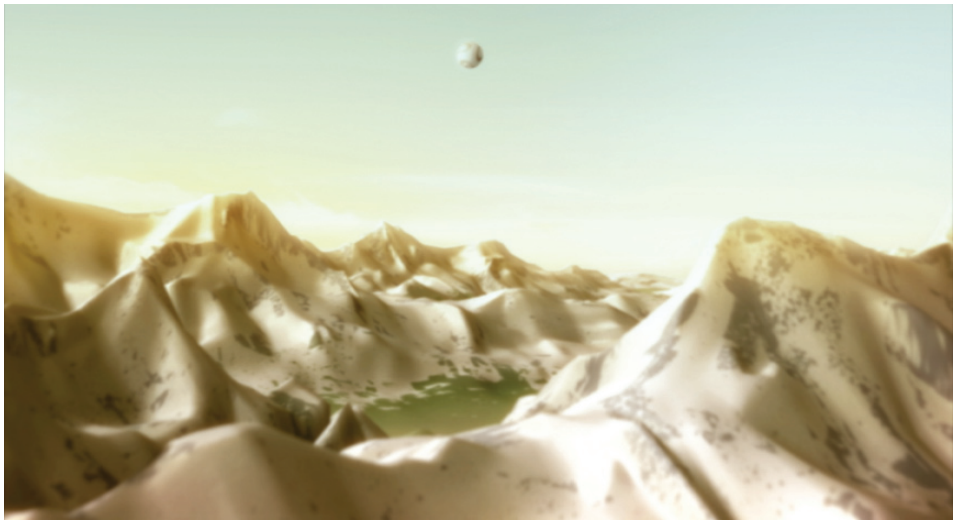
This varies considerably depending on the type of project. For a more involved project we usually start with written concepts and/or scripts, style frames and storyboards. Then we create animations or a pre-viz either with 3d or by filming ourselves on a DV camera and editing it together with terrible sound effects. If we start with the filming process to figure out timing and flow, then we do a 3d pre-vis. Each shot is then updated as the animation and elements are created until the final composite.











So it sounds that the final piece is constantly coming together in your edit suite, for such an important section in your pipeline can you tell us what software and hardware you use here?

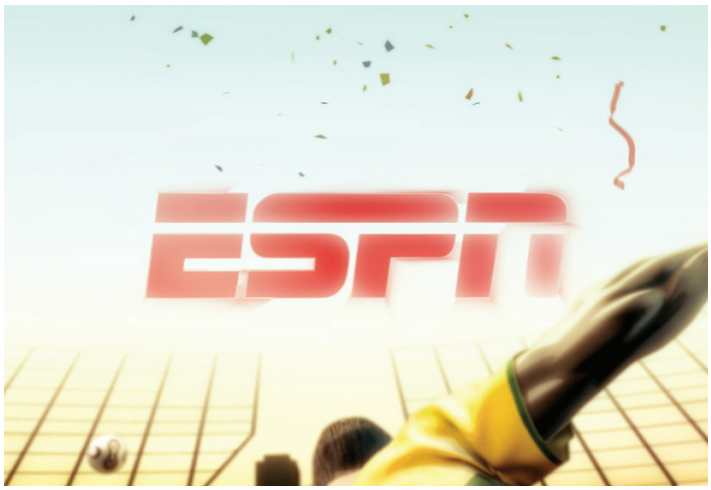
We use a combination of final cut and after effects. FCP on a Mac G5 and after effects on either pc or Mac depending who is doing it.

What has been your studios favourite project to date, can you tell why?

I think our favourite project was the Spike re brand project. When you typically think of a re brand you think of a long under-funded pitch









process, a million tiny deliverables and then a few cool ID's. In this case Spike called us directly and said we had been selected to do the re brand, then they proceeded to give us a list of deliverables that was 90% ID's. With a nice and lengthy timeline we were then asked to pitch them concepts for six to eight 5-10 sec ID's based on their tagline "get more action". We pitched 9 and we ended up executing 7 of them. They were great to work with and we had the opportunity to do a lot of varied styles and execution techniques.

I imagine when you have 1 or 2 big projects like this the studio is very busy but what about when (if) you have quite periods, do you have an ongoing background project of your own that the team works on?

Yes we do. We have really only had downtime for the first time this summer and we have begun working on an ambitious 3d animated piece that would probably turn out to be around 90-120 seconds.

We have quite a few student readers, who are itching to get into the industry, do you have a piece of advice for them?

Hmmm. My advice would be spend your entire student career doing one amazing showpiece that not only incorporates everything you have learned but defines what you are passionate about. One piece of amazing work is much more effective in getting work than a bunch of mediocre projects.

Couldn't agree more, I have seen several graduates make that first step by concentrating their efforts into that one piece that wows them onto that first rung! Many thanks for your time Ryan, this has been a very interesting insight into your blooming company and I wish you all the best in the future.

Interviewed By : Tom Greenway

Ryan Honey

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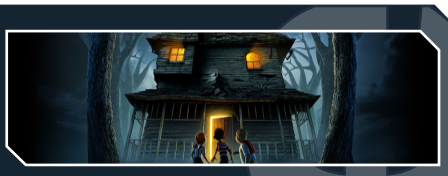
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>>When three kids ,DJ, Chowder and Jenny discover that the house across the street from DJ's is alive, the story of the Monster House brings alive one of the best entirely CG full length feature films to date. Using Performance Capture, MONSTER HOUSE makes use of CG to tell a story which would have been (excuse the pun) a nightmare for traditional film makers and utilises some of the most up to date technology available. In celebration of this milestone in digital film making, 3DCreative magazine talks exclusively to VFX supervisor Jay Redd, and animation supervisor Troy Saliba...>>





JAY REDD VFX Supervisor & TROY SALIBA Animation Supervisor

Hi. Thanks to you for talking to us.

Jay Redd (JR) Troy Saliba (TS)

Absolutely! We are very proud of Monster House and love to share with others our experiences in making this film.

Monster house has been described as a “Goofy, slapstick “horror” for children” Fair comment?

JR : It’s a very tough balance to combine comic and frightening themes. It takes a steady hand in storytelling, performance, and imagery to keep the scales balanced overall, and but let them tip to one side to get the most dynamic drama for the film. I think Monster House is successful in this area because of everyone’s experience and background in film making, and what we each could bring to the table. It’s a huge collaboration.

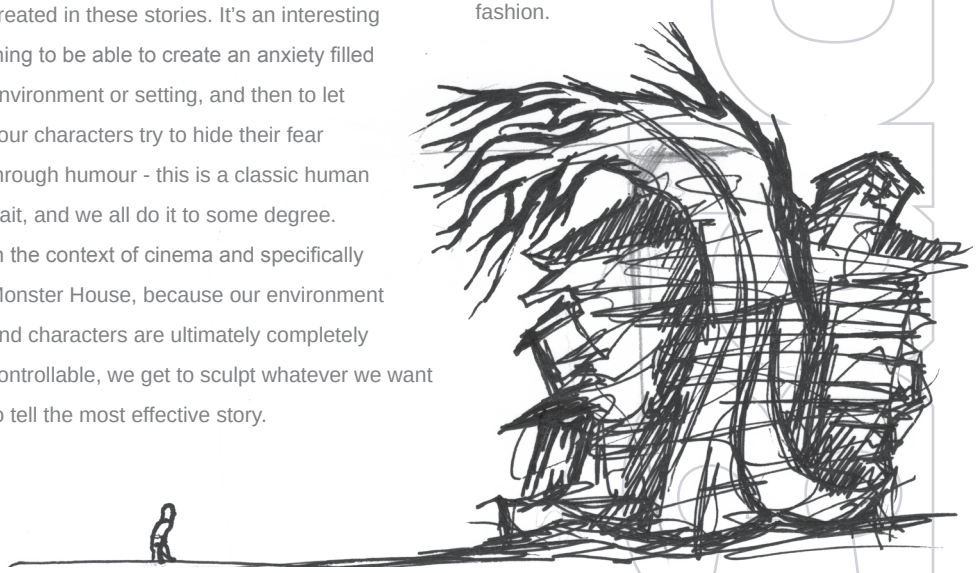
As far as I know, it’s the first CG Haunted House movie for children, was it a conscious decision to make a horror / comedy?

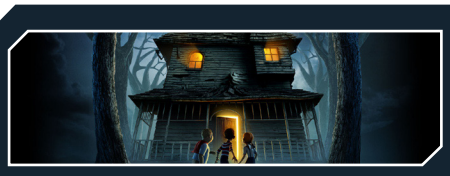
JR : It was a conscious decision from the first word of the script, yes. We grew up watching films like ‘The Goonies’, ‘Raiders of the Lost Ark’, ‘Clash of the Titans’, ‘Poltergeist’, etc. All of these films have a varying mix of comedy and horror, and we were certainly influenced by those and many, many other films from various time periods. I watched a lot of Vincent Price, Hitchcock - read a lot of Edgar Allen Poe as a kid and fell in love with the ‘scary ambience’ created in these stories. It’s an interesting thing to be able to create an anxiety filled environment or setting, and then to let your characters try to hide their fear through humour - this is a classic human trait, and we all do it to some degree.

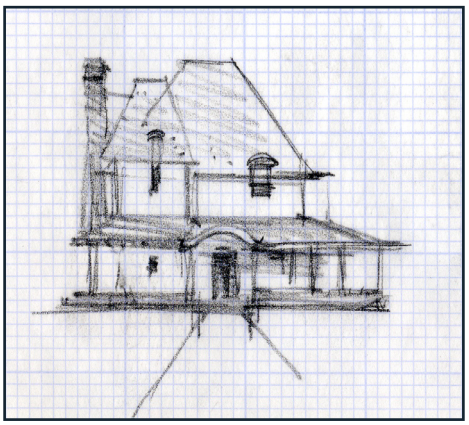
In the context of cinema and specifically Monster House, because our environment and characters are ultimately completely controllable, we get to sculpt whatever we want to tell the most effective story.

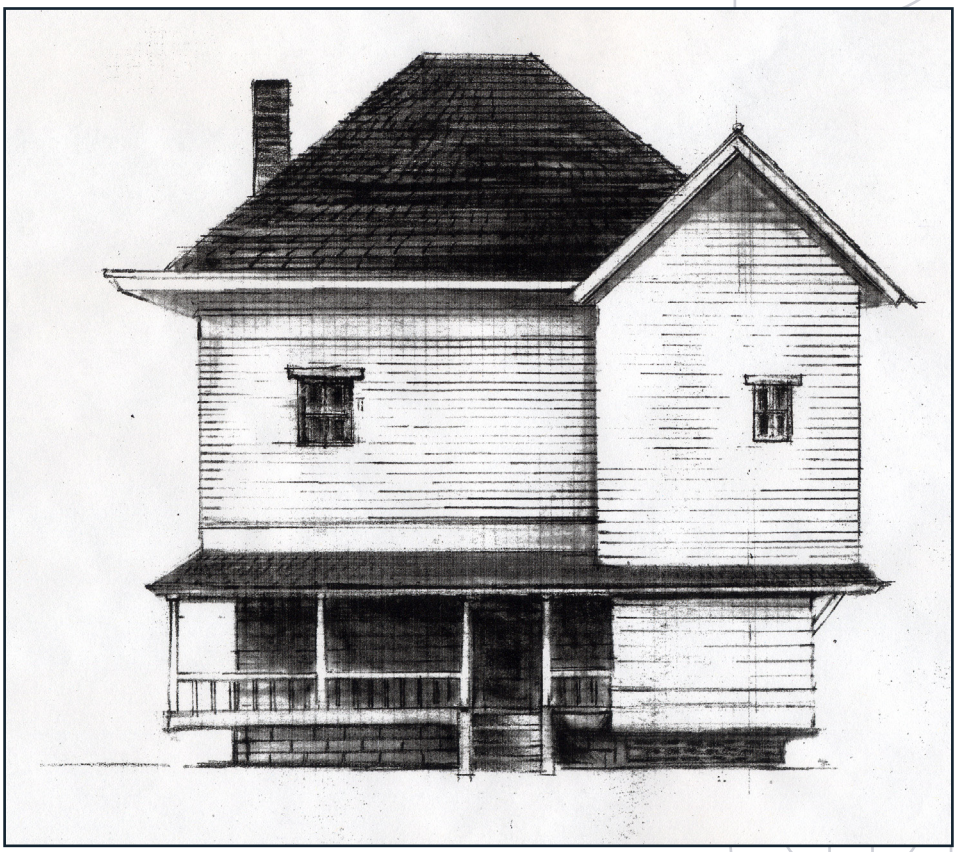
Favourite scary story?

JR : This is a tough one. Poltergeist was a big influence on me, certainly. The setting of a sleepy suburban housing development gone awry was a powerful image to me as a kid. Edgar Allen Poe’s ‘The Telltale Heart’ was a gruesome but really effective story. The anxiety he created in this story is genius because we as the reader, or the audience, know all the secrets already - we get to know exactly what happened. The magic comes from us watching and observing how the main character handles the situation - THAT is where the drama comes from. This is the art of mystery - dealing out information or slight-of-hand, in a very controlled fashion.

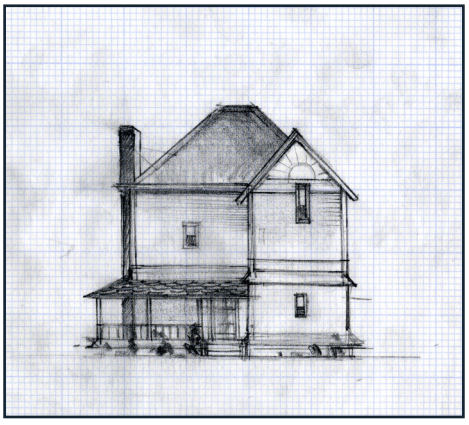


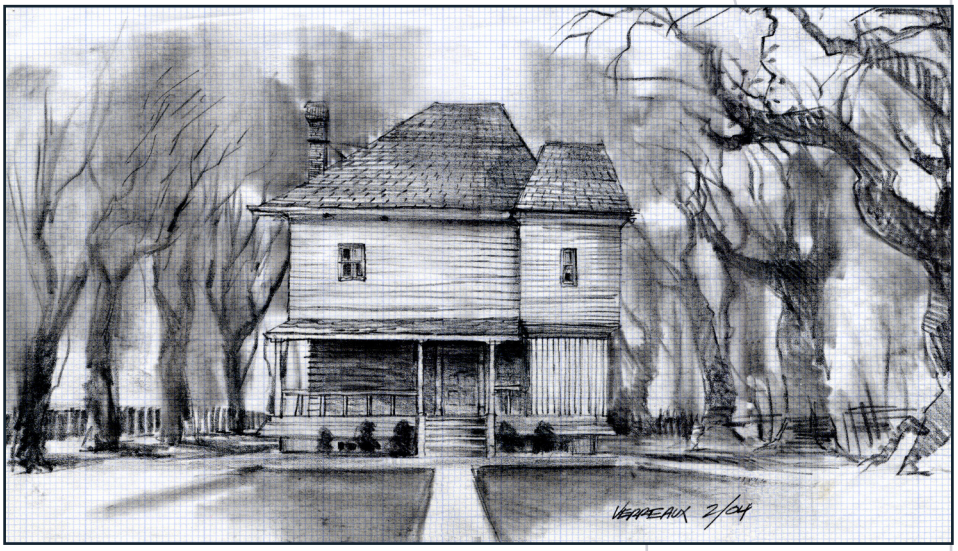


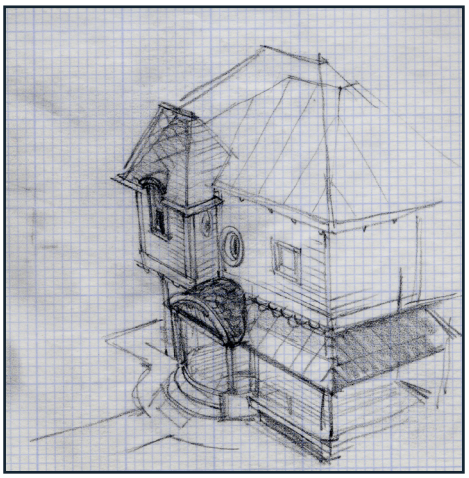






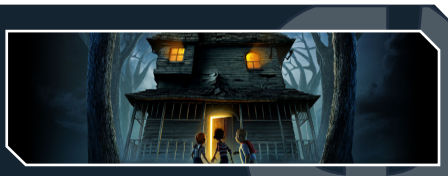






The film has a very 'Roald Dahl-esque feel to both the writing and the direction, was this to appeal to children and also the generation who grew up reading these sorts of stories?

JR : We all love Roald Dahl. He wrote wonderful, twisted stories, with whimsical characters that were also dark and scary. Funny, even though as a kid I was scared of various things, I still WANTED to be surprised and scared. Why do we go to amusement parks, haunted houses, magic shows, or even movies? We WANT to be surprised, tricked, mislead, shocked, and made to feel smart, in the end. We love illusion and mystery and human beings. Roald Dahl knew this well, and he wrote so much of HE would want to read. He is another big influence to me and the rest of the team.



Not to mention the action... It was great to see the kind of evil-grinned-mayhem that adorned my childhood films such as Gremlins and the goonies etc...

JR : I think the mix of whimsy and dark imagery is a potent combination to viewers of all ages. There is something almost primal in wanting to see characters in danger - it's as if WE get to live through them, without US getting hurt. I think it's a way for us to be completely voyeuristic without the consequences of getting caught, so to speak.



I loved the way the characters interacted with each other. Not many CG films have paid this much attention to the details which make the movie believable...

JR : Monster House is ultimately a story about humans, and the human spirit - literally and figuratively. If we didn't have characters that we could identify with, the story is dead. Gil, Troy and myself talked about this extensively before any animation or performance capture was done. Our characters were stylized yes, but they HAD to have the quips and quirks that real people had - these subtleties of body language and expression are what makes humans human.

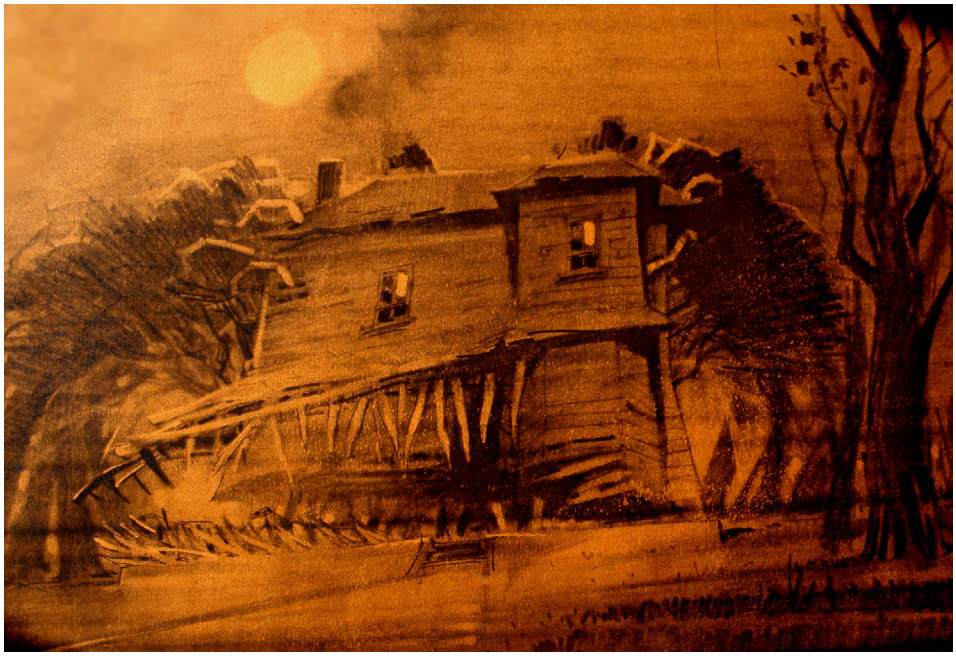


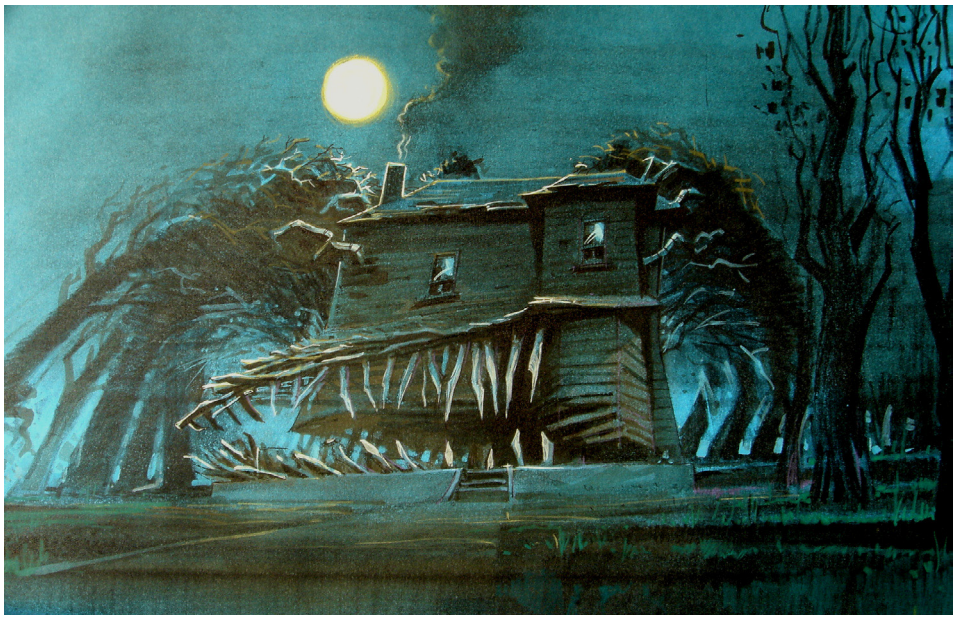


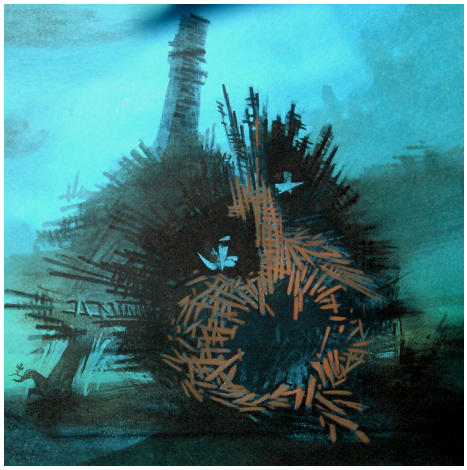
There has been a lot of fuss surrounding the use of MoCap in the movie. There are many critics of MoCap both inside and outside of the industry, what were the reasons in favour of using it?

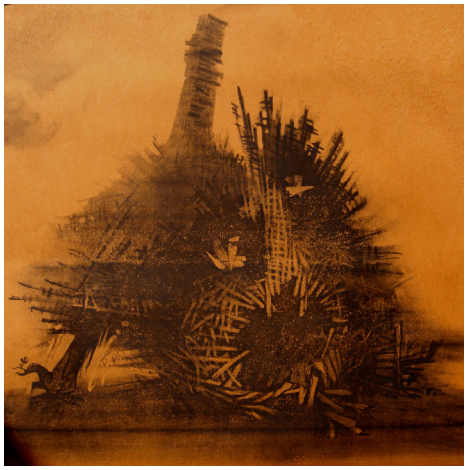
TS : Monster House was my first experience with motion capture. Coming from feature animation I am well aware of controversy surrounding this process. The mocap added a layer of subtlety and texture to the final performance. You mentioned earlier that the characters interacted well with each other. A great deal of that comes from the way Michel, Sam and Spencer, the kids who played DJ, Chowder, and Jenny, related to each other. There was a great dynamic that existed between











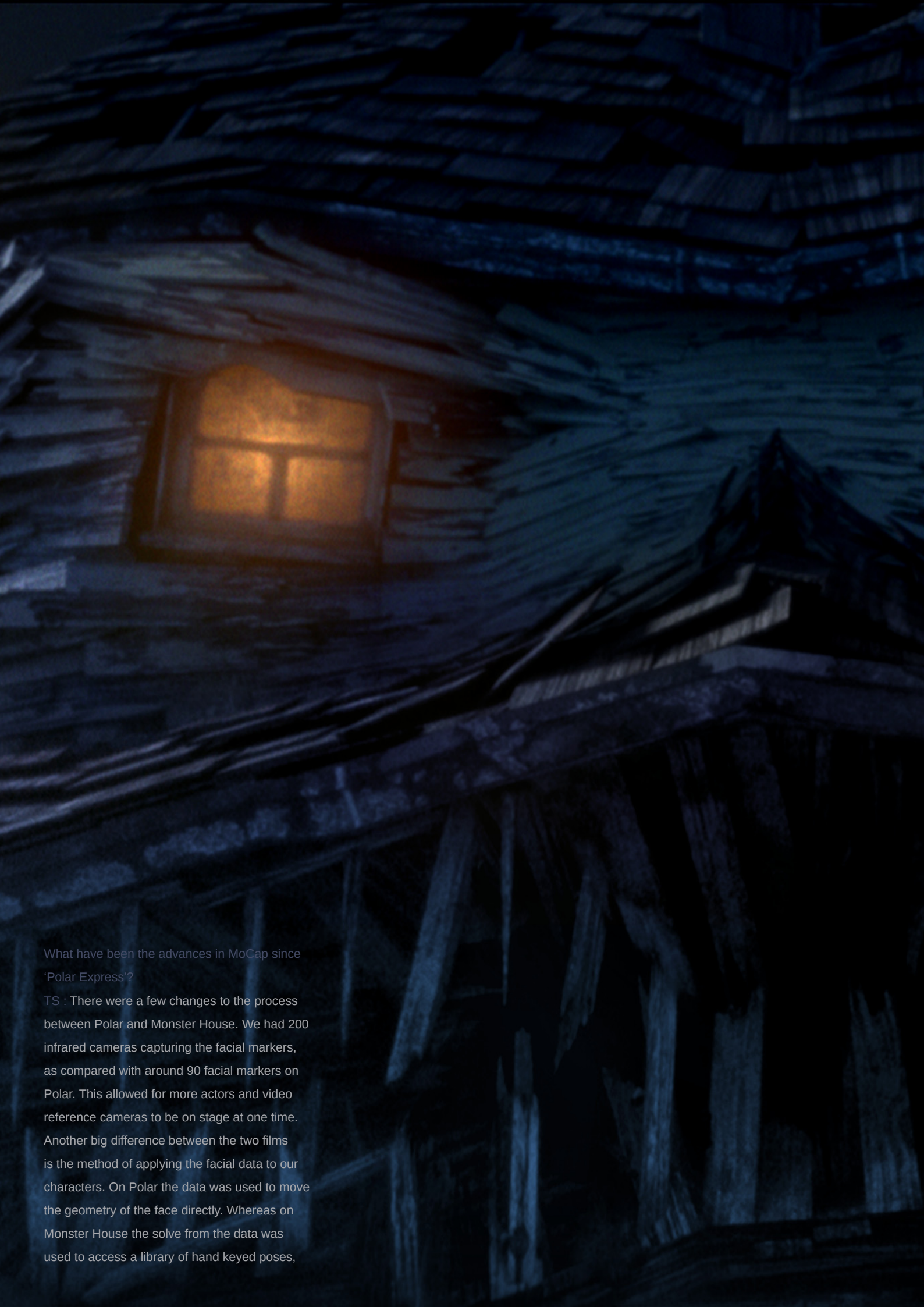
them on stage. This came through with the mocap process, because the actors were not just reading in front of a microphone, but acting together on a set. I think on of the other reasons it seemed more successful on our film is that it is more graphic. Once the mocap was applied to our characters, the animator was able to take that performance and stylize it and push things a bit.

JR : It's yet another tool to add to the mix. It simply allowed us to work performances in a real-time and natural way - the actors loved it, and we got lots of great unplanned, un-scripted 'surprises' on set!

Do you think some traditionalists are fearful of the consequences of using MoCap? Such as the loss of traditional animation skills etc?

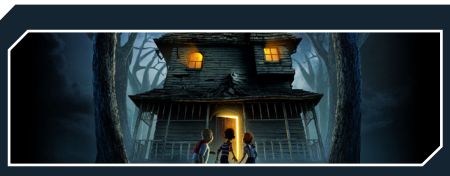
TS : Yes for sure. I had the same reservations myself going into this project. In the end mocap is a tool. You could compare it to live action stats that were used in traditional animation. You could rotoscope them to try and copy the movement exactly, or you could use them as a foundation for a rich performance. Many very stylized animated characters in the past had video reference. I don't think the only purpose for this technology is to perfectly replicate movement. The big thing to realize is that this is not a magic button solution. It takes a great deal of interpretation by skilled artists and technicians.

JR : Again, we look at this technology as another tool. It's always important to ask the question: 'What's the best tool for the job?" This is the same as a painter would decide beforehand - oils or watercolour or pastel or chalk or charcoal or pencil or ink?



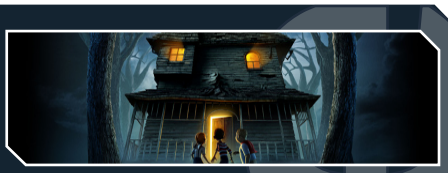
What have been the advances in MoCap since ‘Polar Express’?

TS : There were a few changes to the process between Polar and Monster House. We had 200 infrared cameras capturing the facial markers, as compared with around 90 facial markers on Polar. This allowed for more actors and video reference cameras to be on stage at one time. Another big difference between the two films is the method of applying the facial data to our characters. On Polar the data was used to move the geometry of the face directly. Whereas on Monster House the solve from the data was used to access a library of hand keyed poses,



called FACS poses. This stands for Facial Action Coding System. FACS is a method of analysing human expressions by breaking them into isolated parts, developed by Paul Ekman. Monster House is actually the first mocap film to use FACS . Mark Sagar developed the process of applying Ekman's system to mocap data.

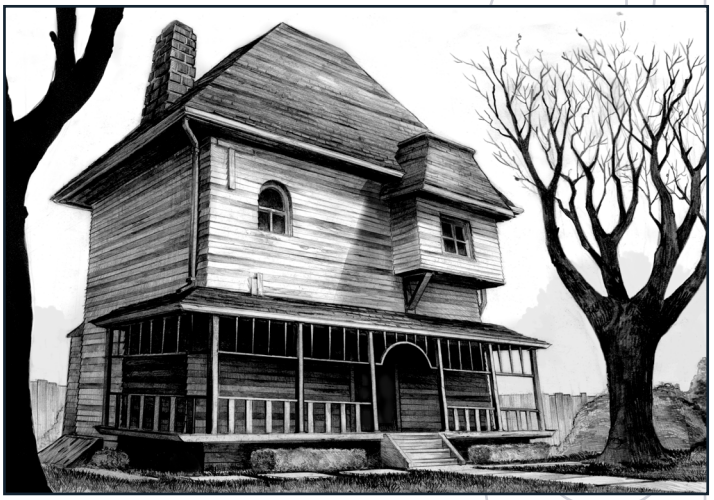
JR : We posed dozens and dozens of faces for each character in Monster House - BEFORE any performance data was applied. This system was crucial, as our characters were a stylized. This system allowed the animator to freely move in and out of performance capture and key-frame animation. It was the best of both worlds





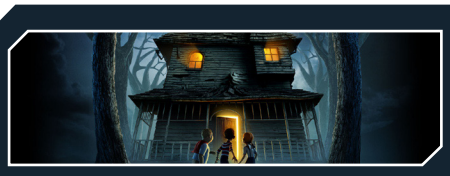
I personally think the Film worked really well with the MoCap, how pleased are you guys with the outcome?

JR : We're very pleased. The characters had a lot of depth, and were very believable. We made many decisions for every character in every scene. Sometimes we would stick with the performance capture, or sometimes we would go purely key-frame, or we would mix the two. It's important to note that all hands, eyes, and props were always key-framed. The eyes are very important, and we chose to go with a more graphically staccato movement to the eyeballs.

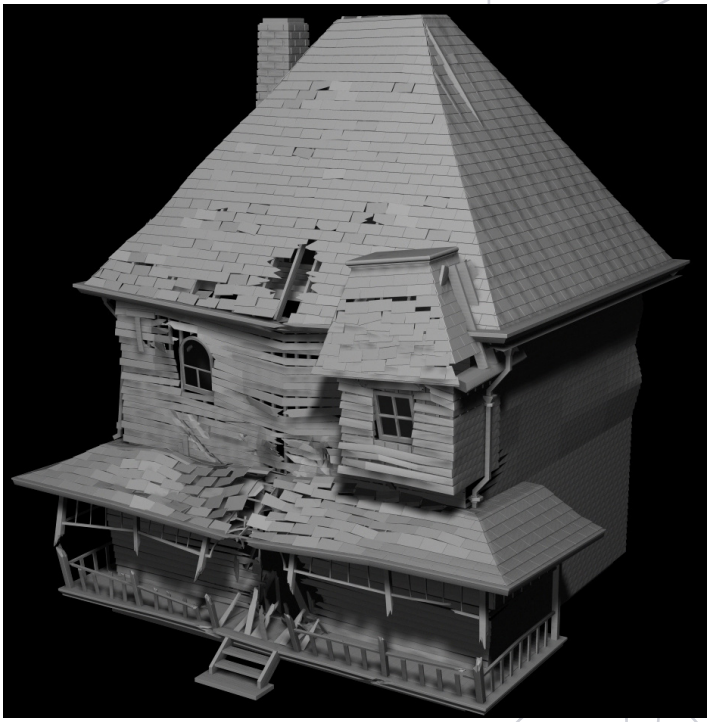












I Had never considered it possible to animate a house! What kind of challenges did this present?

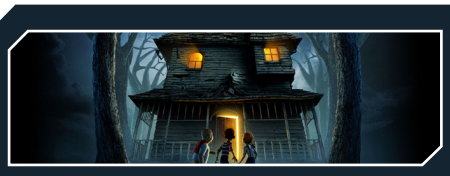
TS : The house was an enormous challenge. Since the movie is called Monster House, this character was something started working on, on day one. In order to bring the task down to size we had to break the house ring into many smaller rigs; some 22 in all. First there was the base rig. This controlled the gross movements of the house. Such as translating, rotating,







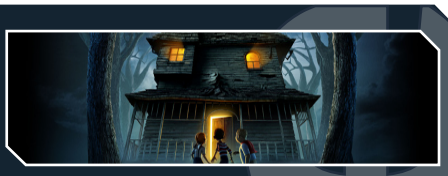
twisting, squashing and stretching. If it was a shot where the house was walking, you had to bring the tree legs in as separate rigs. We would get buy off on the performance from the director at this stage. Once the rough animation was approved we would load in more detailed rigs, the porch, windows, siding, shingles, that sort of thing. The house was very complex with more than 40,000 individual controls. We are all very grateful to Umberto Lazzari for his fantastic house rig. The lead animator for the house was Michael Kimmel. He was instrumental in providing a workable method of managing



this monster; both technically and creatively. It was fun establishing the house as a character. Coming up with a style of movement that would give her scale and personality; she had to be scary and expressive. One minute she is trying to eat someone, next minute she is crying.

JR : Then on top of the animated rig, there was the texturing and lighting. It's a subtle thing, but important none-the-less. Over the course of the film, the House continues to 'break-down'. This is akin to someone looking more and more stressed and tired over time. Once the House







moved, it would never quite recover to the same state. Paint would break off, wood would crack, windows would warp, etc. We designed literally dozes of layers of paint, shaders, and controls to give this house 45 years of age and breakdown. Also, the level of detail was important as we would see the house from far away, and as close-up as the doorbell. Enormous resolution textures and complex shader controls were required to give the house it's extra humanity. The Monster House is certainly one of the most complex characters we have built at Imageworks.

I Agree. Keep up the good work and we look forward to the next one!







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Interview by

BEN BARNES

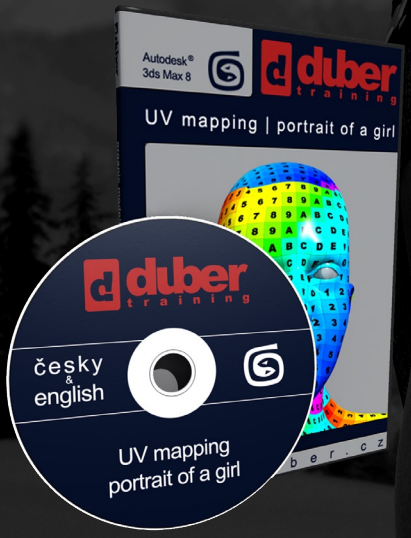
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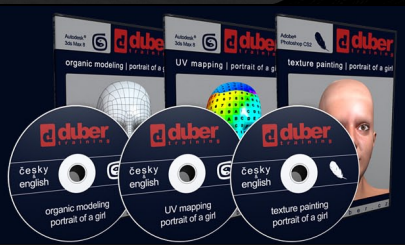
" model organic meshes with perfect topology! "

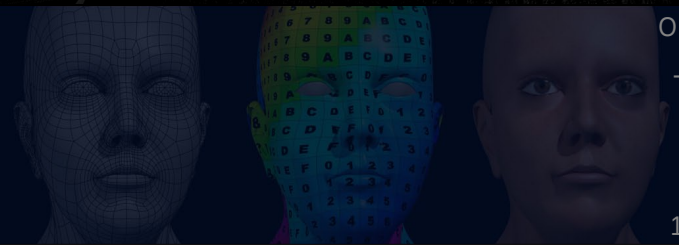


" map complex models fast and effectively! "



" paint photorealistic textures with ease! "





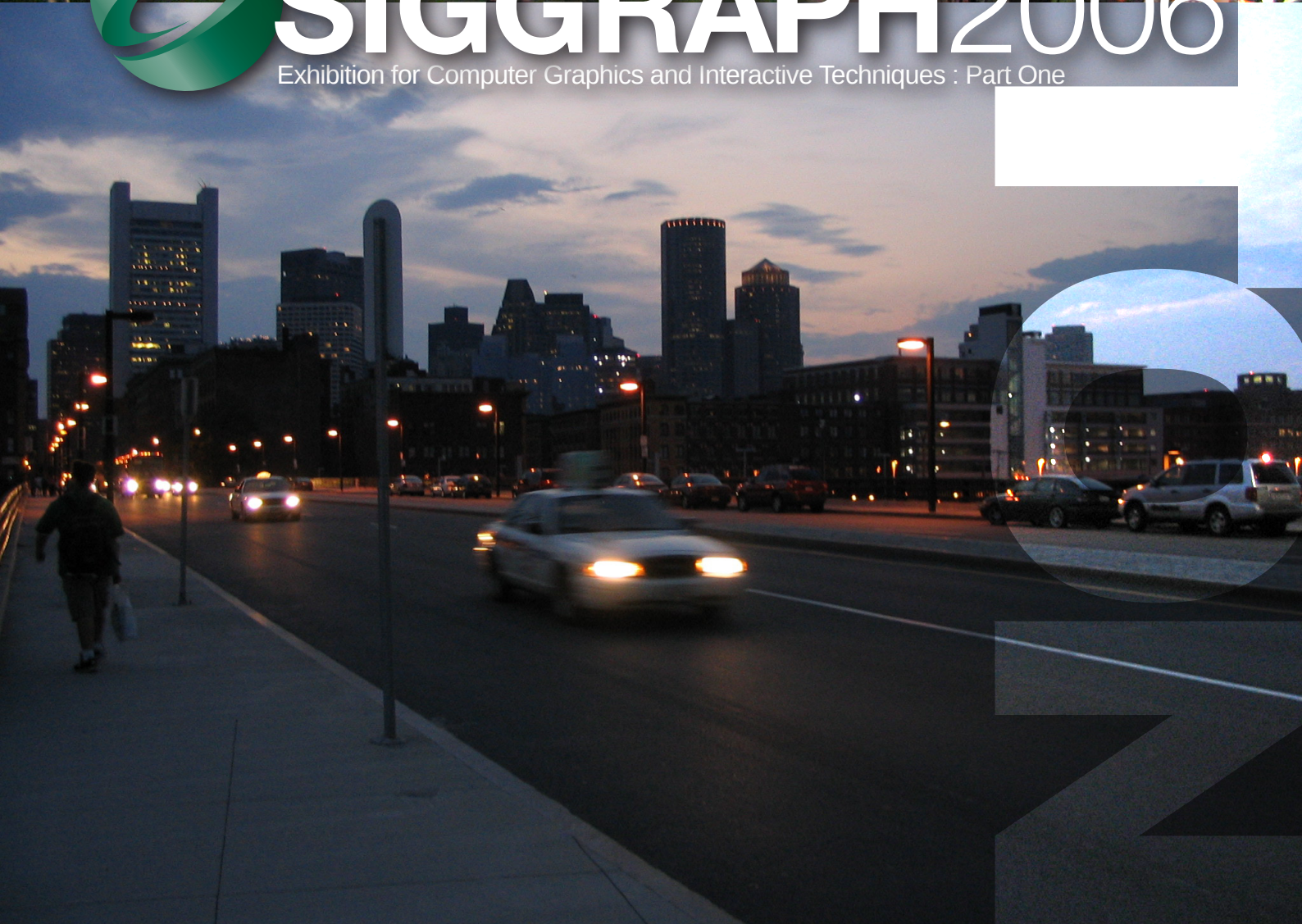
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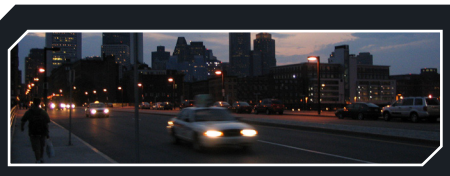
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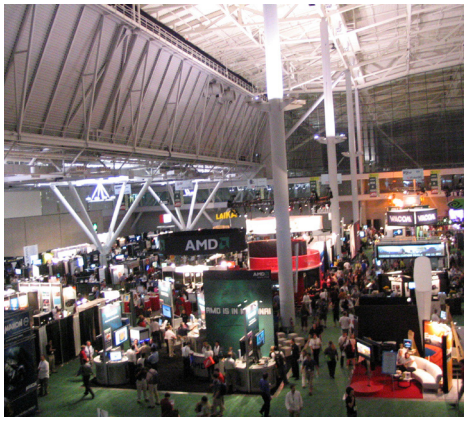


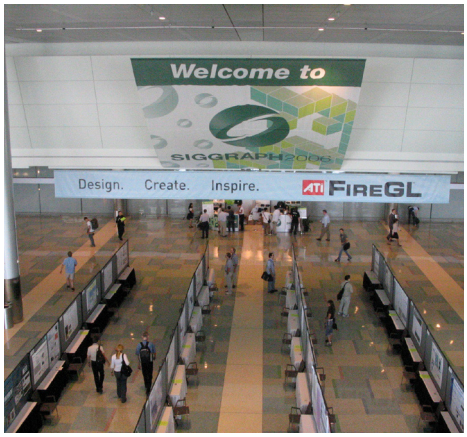
SIGGRAPH2006

The SIGGRAPH Conference (Boston Convention Center, 30th July - 3rd August '06), which has always been considered the most important computer graphics event on the Planet, was a special occasion indeed. That's not just because it was possible to make the point on the new technologies (the most advanced computer graphic reports are also introduced during some conferences, results of

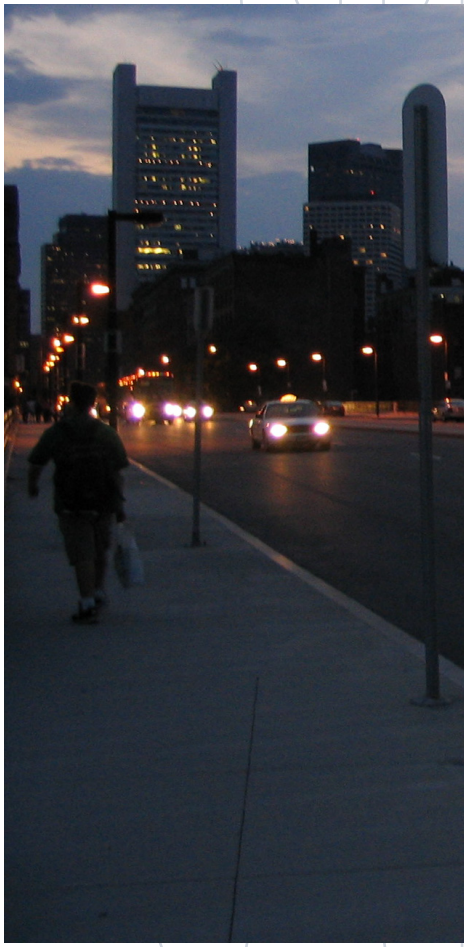


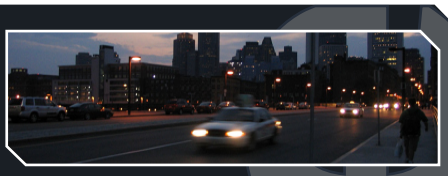






which are often seen in new software packages after just months, or sometimes years), but also for the great stage on which to present new products and impressive upgrades (according to the software houses' press releases). Since the majority of all the great manufacturers were there, it was an excellent opportunity to confront similar products, or to simply dream upon the announced releases, getting a pre-taste for the times when they will finally fulfil our own projects. Although many try to launch new versions in occasion with Siggraph, some are just unable to reach the deadline. However, the presumed release dates were announced and the new beta testing reviews were shown with the main advances added (as with Vue D'Esprit 6, 3DS Max 9 and Mudbox, just to name a few of the most notable examples). To demonstrate the new products versions, great artists were often invited, for instance during the ZBrush 2.5 presentation. Also, many software houses that weren't physically attending the show, still took advantage of the wait for news by announcing their own product anticipation.



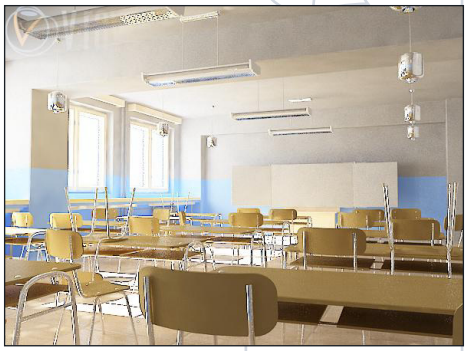


CHAOS GROUP

After an almost endless waiting time, enough to generate a thousand doubts within its users' community, Chaos Group is about to release VRay 1.5 for 3DS Max. The software house has in fact distributed a downloadable release of its excellent tool in a release candidate (RC) version. The new features have been well explained here, during the long waiting time between the latest official release and this much expected goal. Here we'll mention a physically based operating sun and sky system, a new type of camera, new material categories (VRayBlendMtl, VRay2SidedMtl, VRayFastSSS), detail enhancement functionality for irradiance maps, adaptive path tracing for the most important areas of the samples, distributed rendering upgrade plus a whole lot more. The returning VRay customers will be able to access the final release as a free upgrade. Superstitious people could cross their fingers, but the waiting time seems to be over. As soon as 3DS Max 9 is available, Chaos Group will release a 64-bit version of VRay as well. Whilst waiting for the fast stand alone version of the tool, the Bulgarian software house has presented the VRay version for Rhinoceros and a beta testing for Maya. This one is already dowloadable for free, after registering at http://www.chaosgroup.com/support/ (for the PC version of Maya 7). The only limit will be the rendering resolution (600x450 at most), 4 light sources, 200 objects and a watermark on the top left border. It's possible to ask for this version without these internal limitations for specific requirements. Maya's rendering settings are basically the same of those for 3DS Max, the only difference being that VRay will allow the exporting of the scene in a different format that concurs the rendering with a standalone version of it. VRay for Rhinoceros has been available since July 16th, thanks to ASGVIS













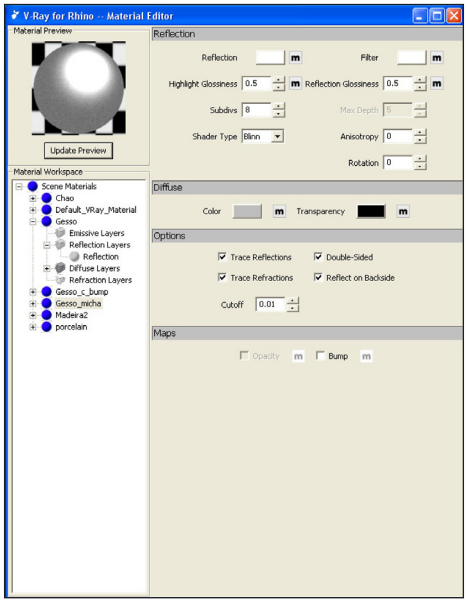


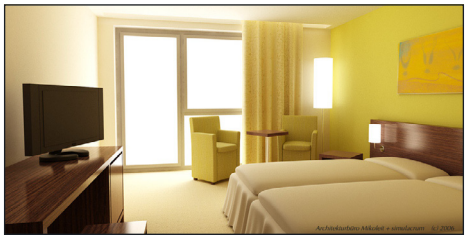




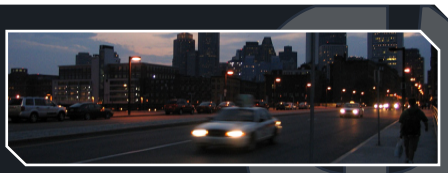


www.asgvis.com who also released it for 'SketchUp!' (Which is now free Google software). The engine is downloadable as a 30 day perfect working sample version. On the forum it's possible to see how the modeller precision perfectly fits with the high quality rendering. We also have to mention that also True Space 7 www.caligari.com can count on an integrated version of VRay. Chaos Group is progressively trying to release the excellent and appreciated calculation engine for the highest number of platforms, in order to increase their customers. www.chaosgroup.com











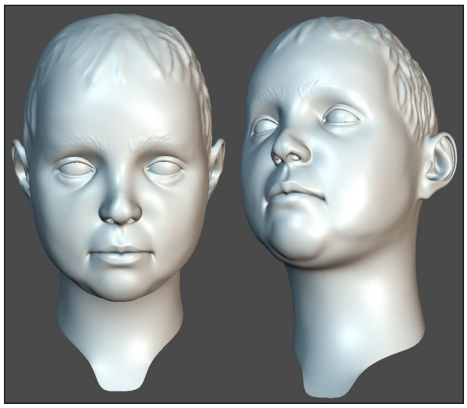
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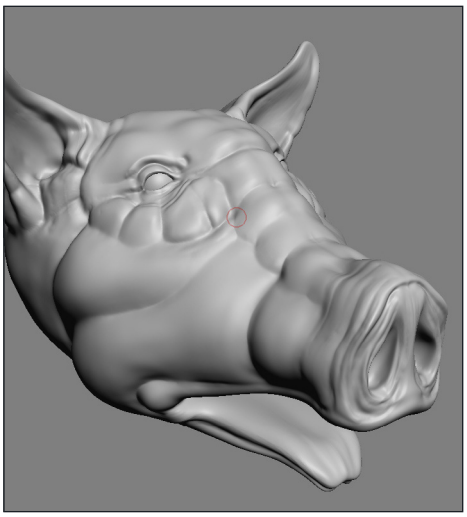
Nevercenter has just released a beta 2 version of its own surface modelling software - Silo. It's about a public beta testing, but it's accessible just for the PC users who have also a previous registered version. The software has a few recognisable bugs and some disabled features. New features will be added until the final version release and, using the forum, it's possible to help with eliminating bugs and to suggest new implementations and tips. The second version will be a brand new software core development and will introduce a brush-based displacement painting (similar to what is possible in ZBrush and Mudbox), placed in a traditional modelling environment, and will fit the subdivided surface modelling paradigm, LSCM UV unwrapping and many interface upgrades (now fully customisable), operative speed, workflow and related tools (displacement image based), sticky key cuts, topology brush with edge bridging, side distance based soft selection and surface snapping. On the website, a sample video has been added in order to show the new modelling features, and the first users feedback is quite positive - in particular regarding its speed and complex shape definition, related to the usual modelling operations. The price rose from 109$ to 159$, according to a marketing model, which assumed that high-tech professional tools should be sold at an accessible price. Customers that bought this product before 1st July (109$) will get the upgrade for free, which will be sold at 59$ from the 1.x versions.

www.nevercenter.com

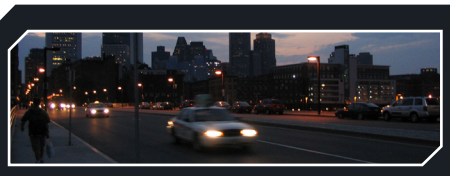












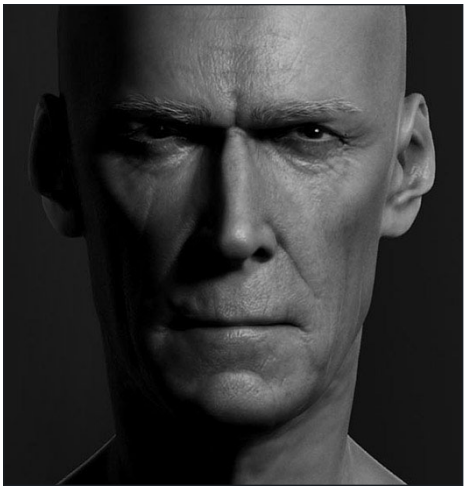
MUD BOX

This real time modeller, released by Skymatter from the healthy New Zealand lands, was probably the most exciting surprise this year! Considered by many a professional as a ZBrush extension/upgrade and entirely developed by artists into advanced productions, such as movies and entertainment, has the most complex beta tester and beta site. It's actually a real time 3D sculpting software with an extremely simple interface. Its incredible high number of polygons (even millions) don't seem to affect the manipulation on a not "ultra-pimped" machine. It uses textures with mesh in stencil bringing back, and exports complex surfaces through normal mapping in order to reduce its weight to a few Kbytes. The beta testing is still open (you will be contacted if you show to have the required skills after completing a form) whilst the documentation is still accessible on-line (updated after every release) protected by id and passwords. The software is actually on a beta 2 version. www.mudbox3d.com

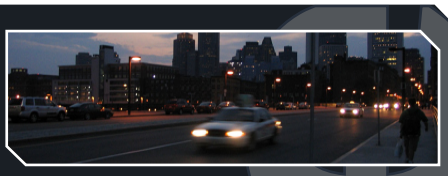








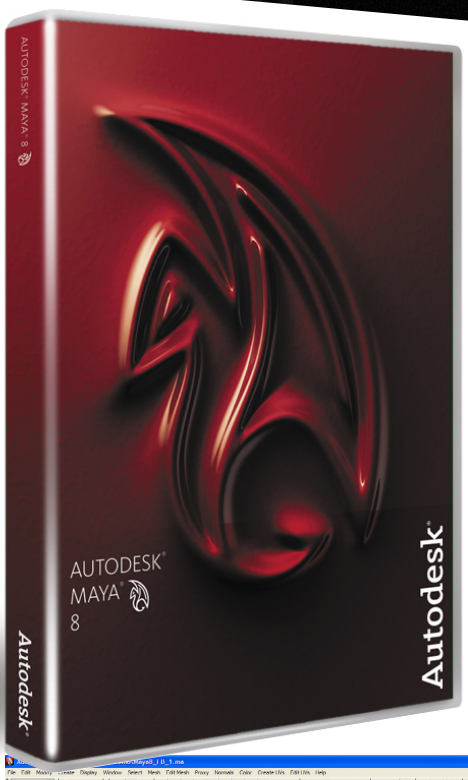


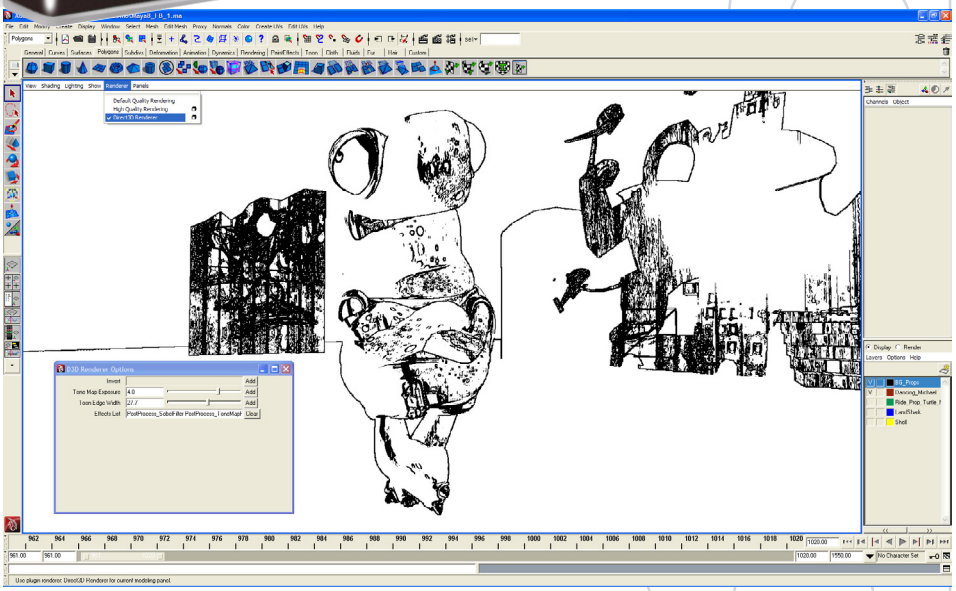


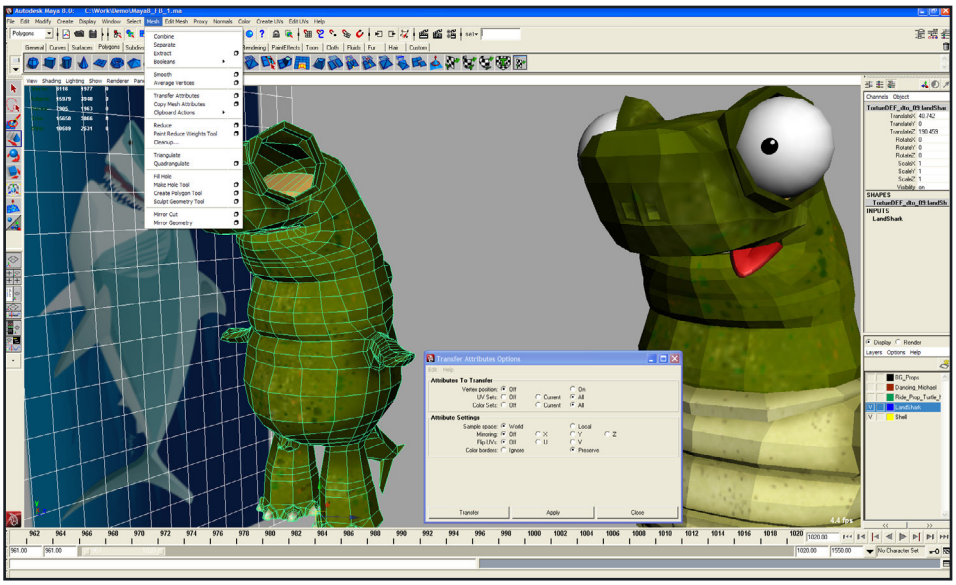
AUTODESK

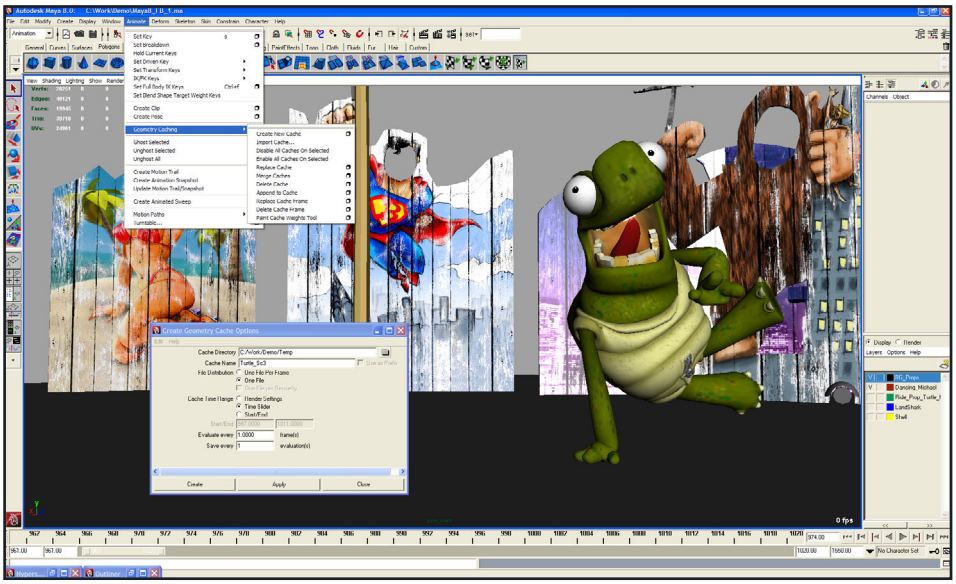
With no doubt, this software house has released the most important news and involved the highest number of users. The 8th version of Maya is available right now and directly downloadable from the web. Marc Petit, Autodesk Media & Entertainment Division head deputy, has said: “At the moment, 3D artists have to face huge problems, such as heavy and complex data sets, next generation videogames for different platforms and the need for more photorealistic images. Work teams are always bigger and require advanced collaboration and data management tools. Autodesk Maya 8 is the perfect solution in order to improve the productivity and the pipeline”. Maya 8, thanks to a perfect combination between a 64-bit support, multi-threading and algorithms, allows to load huge data sets which are able to interact much better than before. A new development has also been done for essential software areas, such as skinning, tiling and proxy subdivided polygonal meshes - speeding up actions that used to take a lot of time on both old a new workstations. Jack Brooks (Walt Disney Technology) said “64bit technology helped our artists in their huge scenes management. We used the pre-production phase beta version for an upcoming movie. The possibility to extend Maya’s features through API, allowed us to fit the software to our strict requirements”. The best features on this version improve in particular the modeling and texturing productivity. Artists who usually work with different 2D and 3D tools will be able to manage, at its best production pipeline, data using the following upgrades; API extensions, Autodesk FBX files exchange technology improvement and a new Autodesk Toxik compositing software inter-operability. Emmanuel Valdez, creative lead at High Moon Studios (California), said “artists working for us come from different backgrounds - from animation to character modeling - and they have to work together and share 3D files, no matter what software they use. That’s why we chose Autodesk Maya, along with 3DS Max and MotionBuilder. These products offer the best creative tools on the market”. Autodesk works for 3D artists involved in video -games development, design visualization, cinema, television graphic and design, trying to develop their ideas without any typical production limitations. The software range includes Autodesk Maya 8, 3DS Max 9, the animation, modelling and rendering software VIZ 2007 and Autodesk Motion Builder 7.5 (used for the characters animation). Inter-operability between them is possible, thanks to Autodesk FBX - a free format, developed for the 3D files exchange. Maya 8 supports 64-bit systems for Windows and also Linux,

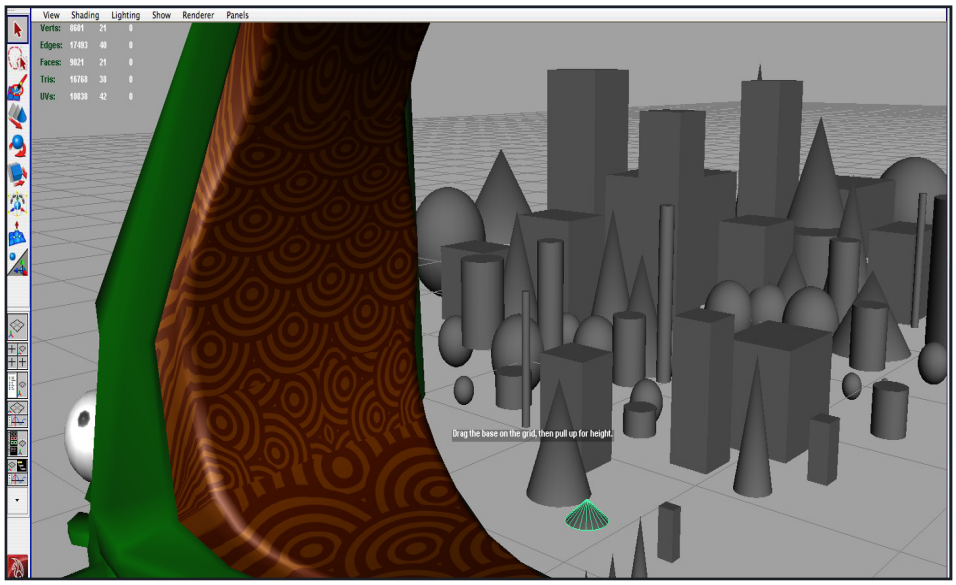






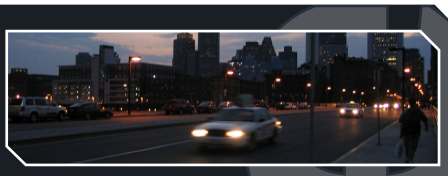


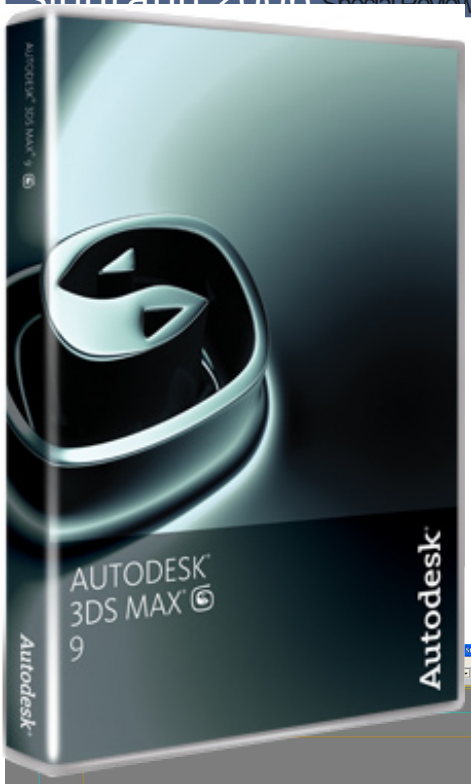


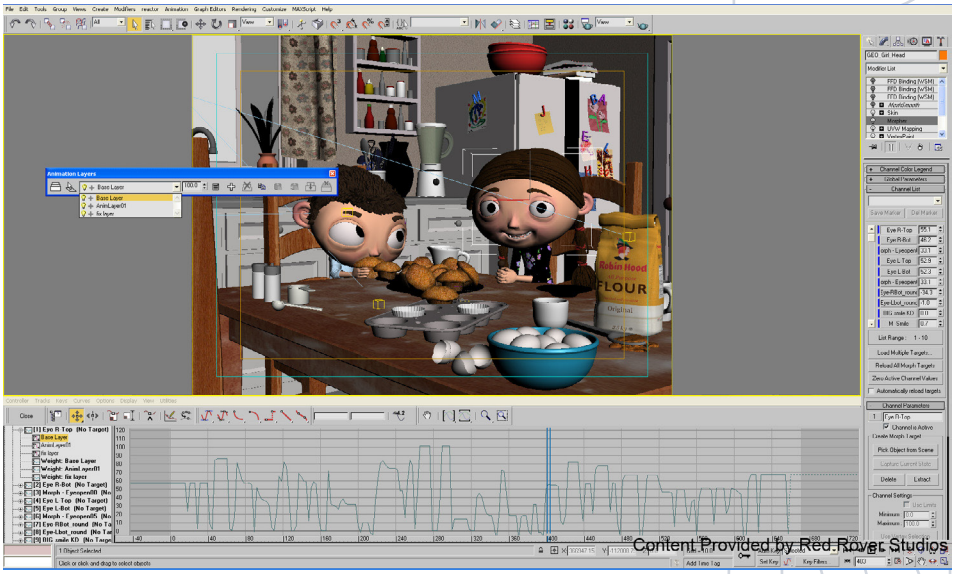


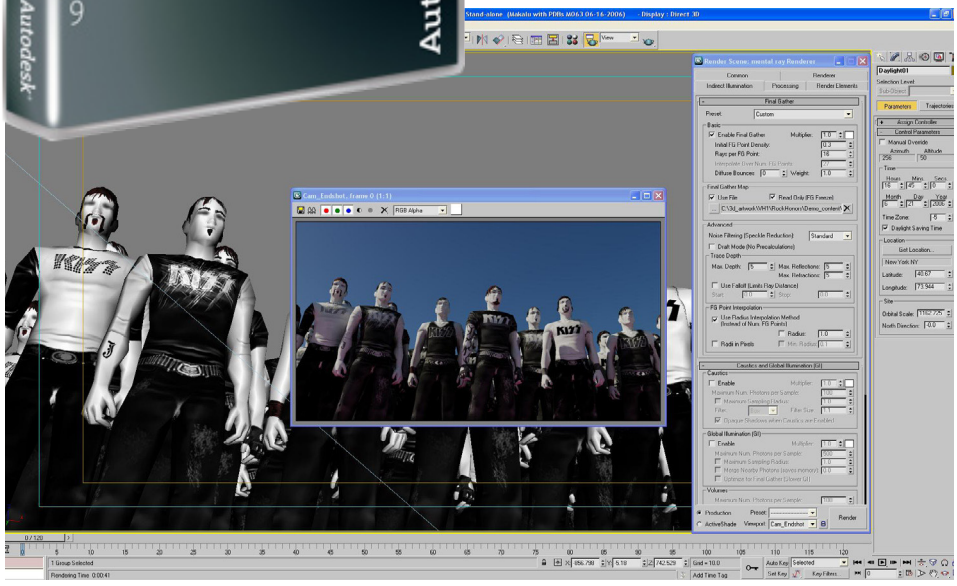
variable multi-threading, an improved mental ray 3.5 core, developed for a better rendering performance and a better memory usage, Polygon Bridge and Transfer Polygon Attributes, HDR and floating point images support and layer render exportation to Autodesk Toxik software. Thanks to HP and Intel, third party developers (taking part in the Autodesk (ADN) developing web Sparks program) already gave birth to 64-bit versions of their plug-ins, giving users the chance to immediately access a 64-bit developing tools set. The 64bit version of the software will be supported by Windows and Linux. The 32-bit version instead will be supported by Mac OS X as well.

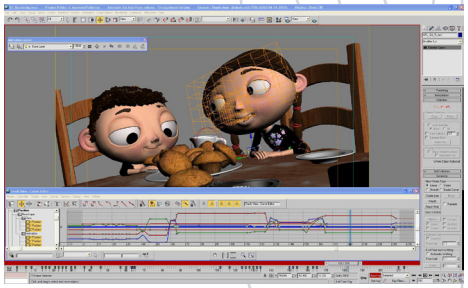
www.autodesk.com/maya. Prices vary from 2.099 Euros for Maya Complete (Standalone version) to 7.349 Euros for Maya Unlimited (Standalone version). Uprades for Maya 7 will cost 869 euros (from Maya 7 Complete to 8 Complete) and 1.199 euros (from Maya 7 Unlimited to Maya 8 Unlimited). Maya Platinum Membership will start from 1.364 Euros per year, and it can be bought with the product. Platinum Membership customers will have the right to access to the software upgrades, technical assistance, excellent software improvements and to the e-learning documentation. For more information, contact an authorised Autodesk reseller, or visit their website: www.autodesk.com/maya-support. In occasion of Siggraph 2006, Autodesk also introduced 3DS Maya9, their most up-to-date modelling, animation and 3D rendering solution. 3DS Max9 finally supports 64-bit technologies. “From the early 90s, 3DS Max has been the main reason for our video games success”, Danis Dyack (Silicon Knights videogames) said, “including titles such as ‘Metal Gear Solid: The Twin Snakes’, ‘Eternal Darkness: Sanity’s Requiem’, ‘Bloody Omen: Legacy of Kain’, ‘Dark Legions e Fantasy Empires’. Today, 3DS Max assumed a drastic role in our next title developing ‘Too Human’, a next generation epic action game.” As for Maya, thanks to HP and Intel, third party

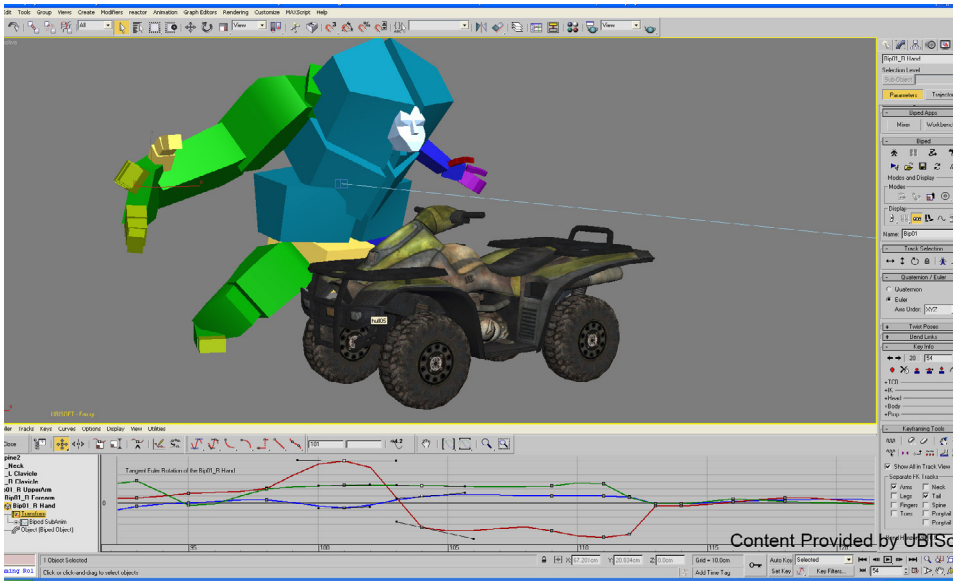








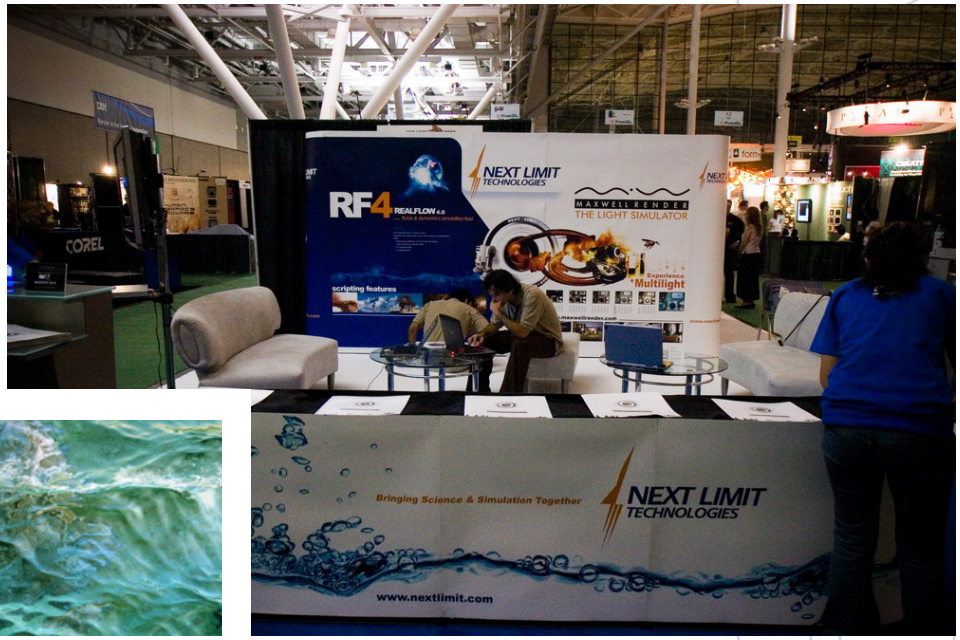




developers (taking part in the Autodesk (ADN) developing web Sparks program) already gave birth to 64-bit versions of their plug-ins, giving users the chance to immediately access a 64-bit developing tools set. Autodesk will release the English version on October 15th. Prices will be 4.250 Euros and 900 Euros for the upgrade from 3DS Max 8. 3DS Max Subscription will be 450 Euros/year and will be available with the purchase of the product or the upgrade. Customers who apply will have the right to access to the software upgrades, technical assistance, excellent software improvements and to the e-learning documentation. For more info visit www.autodesk.com/subscription. We also have to mention http://area.autodesk.com, where (after free registration) you'll be able to access 3DS Max and Maya resources for free. This website has been done for the users and contains images, interviews, tutorials, textures, blogs and also forums. Actually, it hosts a utility and tools set called Bonus Tool for Maya 8.

NEXT LIMIT

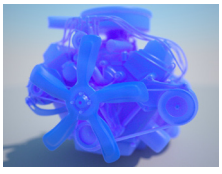
This spanish software house brought its two top tools RealFlow 4 (actually it reached the 4.1.1.0091 version) and MaxwellRender 1.1. RealFlow 4 is the latest version (now on 64-bits as well) for the excellent dynamical fluid simulator. In the last years it has been used in many movies and mainstream productions, and this is beacuse of its realism and its stunning kinetic energy transmission based dynamic fluid

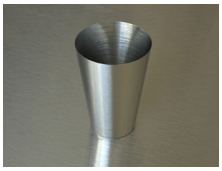




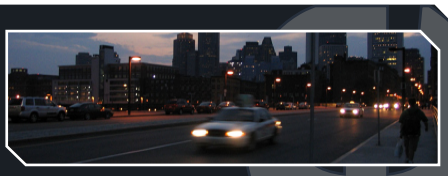


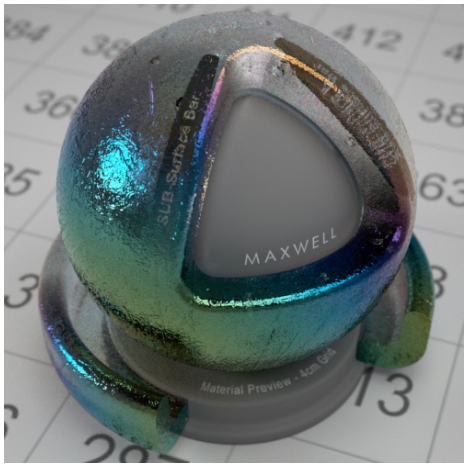




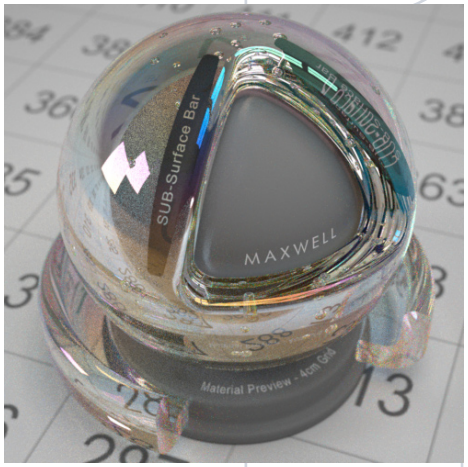


simulations. This engine has been spotted as the most flexible and advanced, compared to all others' base and software integrated dynamic fluid applications. RealFlow 4 is a stand-alone with an added plug-in that allows the input and output data exchange with all the well-known 3D packages (3DStudio Max, Maya, LightWave, XSI, Cinema 4D e Houdini). With the new release you will get main upgrades, and will be able to re-organise your simulation files, insert the simulation into a log file. You'll get new export formats, camera definition inside the package and you'll be allowed to include them in the simulation itself, new superficial tension controls and a new graphic interface (GUI) re-organisation. Everythingis based on a logical use of the software in order to have a neat and clean work area. It's also finally possible to stop the mesh generation during the process, fix the parameters and keep on with the work. You'll be able to count on Python scripts in five areas: batch run, event, daemon, wave and fluid. This allows excellent simulation controls and to download ready-made scripts directly from a specific website www.nextlimit.com/nlscript. On July 4th, the new Maxwell Render 1.1 version was released for Mac and Windows as well. Every user will be



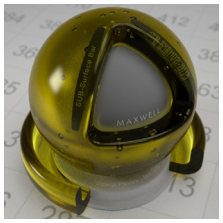








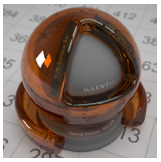
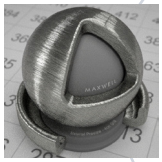











able to download it for free, since this will be an intermediate version. Updates on new plug-ins, in particular for the 3DS Max connection one, will follow. SDK for Windows has also been released, not yet the one for Linux and the 64bit instead. Within the upgrades we will mention the calculation speed increase, the calculation















from hard disk (-hd) option which is back, quality add-ons on the refraction index (nd) brought to a 1000 value, improving on the coating and on the graphic interface (Maxwell Studio), a new Pack&Go feature. The most exciting news anyway, is related to the materials collection developed within the international users (22,000 at the moment) community at the official forum. Divided in categories with a high quality preview and a description, materials are growing day by day and tested/filtered directly by the website admin. Materials are cross platform, so, everything been developed on a certain software can be also used on a different one or even on a different platform.

http://mxmgallery.maxwellrender.com

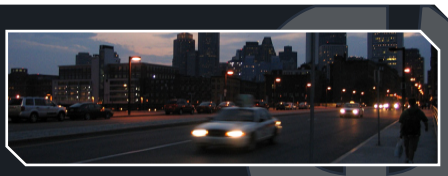








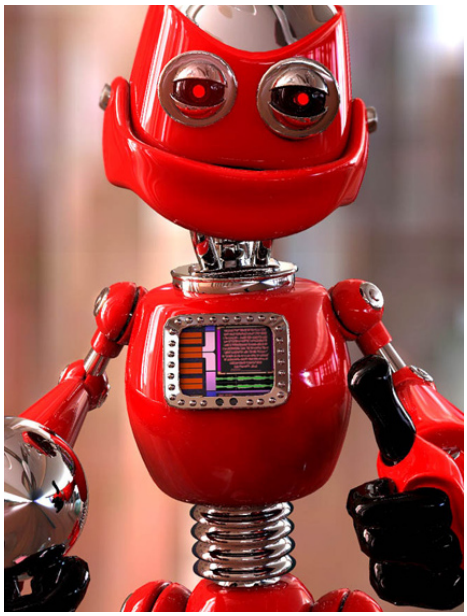




E-ON SOFTWARE

This French softwarehouse has announced big news releases. Ozone 3, is a sky generator plug-in, developed to work directly into 3DS Max, Maya, Cinema 4D, LightWave and XSI. This 3rd generation tool is able to create realistic atmospheric effects using Spectral and Volumetric cloud generation models. The package comes with 100 ready-made atmospheres and it will be available at 199$ before the last 4 months of next year. The most exciting news is their top product, Vue D'Esprit

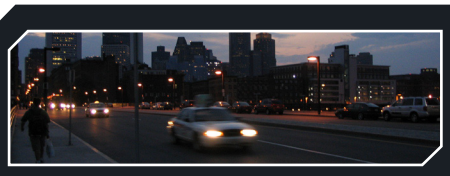




6 upgrade. This a brand new redevelopement of the entire range (xStream/Infinite and Esprit versions). Vue 6 xStream (995$) offers an extremely realistic natural environment developing set to professional artists, rich in details and easily connectable with 3DS Max, Maya, XSI, LightWave and Cinema 4D. You'll be able to animate as you've always been used to thanks to the graph editor, and you'll have complete control on keyframes, temporal curves and interpolation. The new painting EcoSystems interactive tracing system allows the user to work on surfaces directly through pressure sensible tablets. It's possible to define diretional or omni type wind events. More features such as a new clouds generator model, new terrains types with manipulation options, hypertextures, new texture mapping modes, stand alone nodes distribution rendering engine, MatchMover and Boujou motion tracking informations import are also available. Vue 6 Infinite stand alone version will be sold for 695$. The range is completed with Vue 6 Easel (99$), Vue 6 Esprit (199$) and Vue 6 Pro Studio (399$). We also suggest you check out a specific website (Cornucopia 3D) where users will be able to sell their own resources: www.cornucopia3d.com.

www.e-onsoftware.com

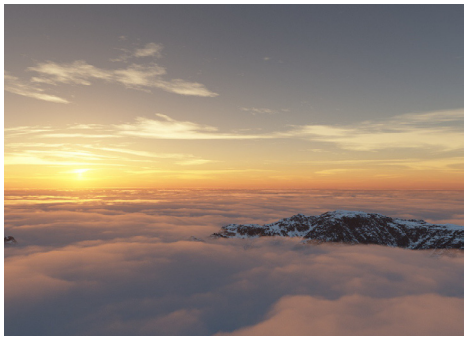




TERRAGEN 2

Although it was not shown at Siggraph, we do want to mention the alpha and advanced beta testing development of the new Terragen 0.9 ambient generator' successor. It has been redesigned in a new sparkling version that also includes some of the best and realistic vegetation, lands and cloud generator algorithms. The latest images allow us to imagine the incredible level of detail, unimaginable for a 3D package like this until today. We also have to mention the import of complex 3D models including textures as well.

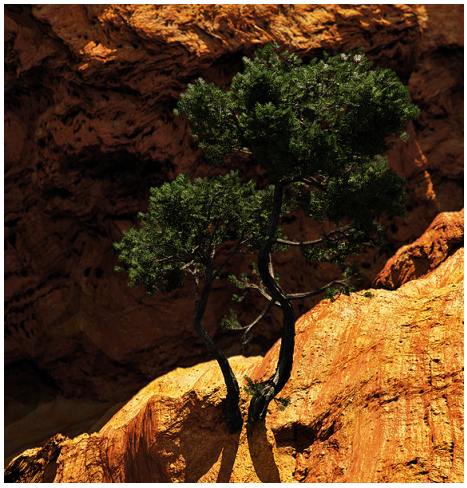
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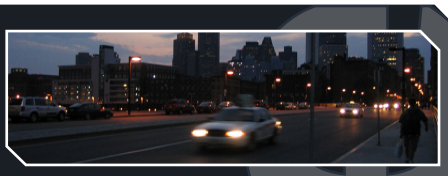












MAXON

The German software house has announced the long awaited Cinema 4D version 10 preview. They not only introduced the latest versions of Body Paint 3D and Cinema 4D, but they also put big efforts into showing the use of its packages for high level productions such as Monster House, where the great visual effect company Sony Pictures Imageworks used Cinema 4D and Body Paint 3D as well for the texturing. This is just the latest movie counting on Maxon tools'benefits after Polar Express and The Chronicles of Narnia: The Lion, The Witch and the Wardrobe. www.sonypictures.com/movies/monsterhouse/site/index.php. The head of Sony Pictures Animation digital painting department April Knobbe, showed the texture mapping techniques used in their first movie Open Season. www.maxon.de









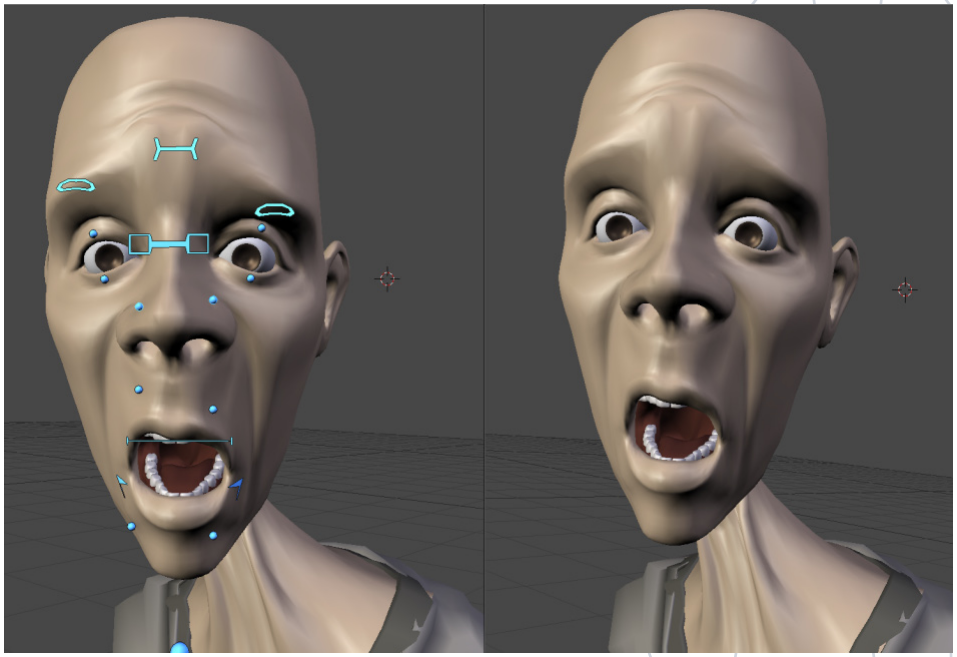


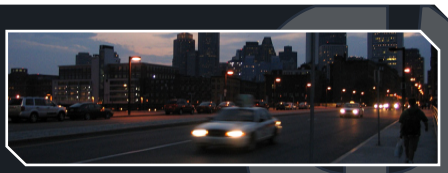




BLENDER

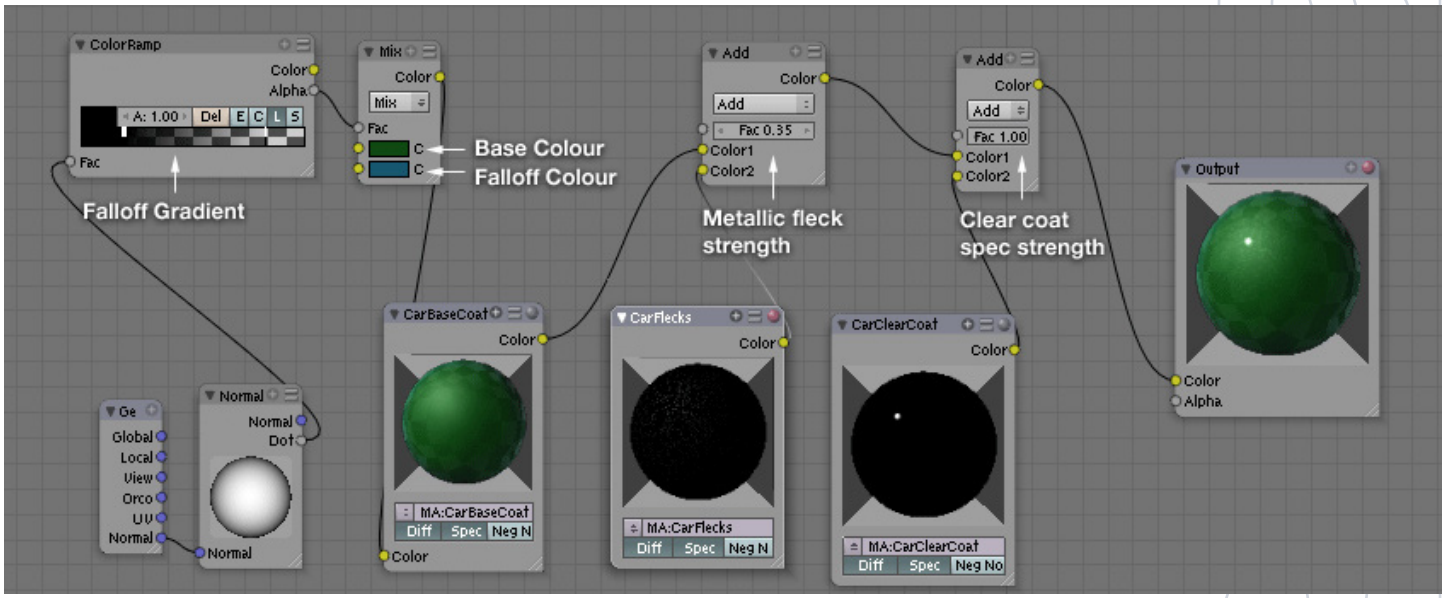
Thanks to the Siggraph organization and to an unknown sponsor, the Blender and GNOME Foundations have been able to attend the greatest CG meeting, with a stand in the main hall. The 'Elephants Dream' showing was well recieved and the latest features to the software have been introduced through many workshops. Some video can be viewed on the website www.blendernation.com. Blender, which is the most used open source 3D software, is going through a great period. The Orange project gave birth to the short movie 'Elephants Dream'. The rate of development is fast and the new features are extemely important since they will reduce the differences between Blender and the most well known commercial programs. BlenderPeople 0.8, an animated crowd simulator, has just been released; the Sculpting tool (coming directly from the OpenSource SharpConstruct) is actually under developement, and it will have Zbrush or Mudbox similar features; sky integrated simulator and volumetric clouds images have also just been released. The software documentation is however still under devoloped, according some community members, since it hasn't been updated with the latest features. What is for sure is that next autumn will be packed with surprises for the current and new Blender users. Almost one year ago, the Orange project was about to take off: its main goal was to realize a CG short film with the only use of Open Source tools. Last May we were able to see their results: 'Elephants Dream'. The movie, conceived by the Blender Foundation and co-produced by the Netherlands Media Arts Institute, was developed by six people in Amsterdam, chosen within the users and Blender developers community (also Enrico Valenza from Italy). This project is not just the first movie which has been created using only OpenSource tools. It's also been released under a Creative Commons 2.5 licence, which allow the full clip and Blender scene files manipulation. It's been the first european production published on HD-DVD as well. The short film and all the related stuff are downloadable for free (on different formats including HD 1080i) at http://orange.blender.org. The latest version of the software (Blender 2.42a), released on July the 25th, solved a few bugs related to the game engine on every system and a few minor bugs. The 2.42 release improved the tool quite a lot, in order to satisfy the Elephants Dream requirements; the render pipeline has been modified to fully support the multithreaded calculation, the viewport preview, the objects layers and single passages yield. Just the z-buffer, the motion blur speed vector and the normal value for each pixel are available at the moment. A new vector motion blur calculation system has been developed; the management of the memory used during the rendering has also been improved. More complex and realistic results are now also possible thanks to a new and improved nodes based shader creator system. The internal compositor has been upgraded in order to fit with the new rendering engine and can also count on a nodes based interface, similar to the more professional softwares; in the release notes it will be possible to find an introductory

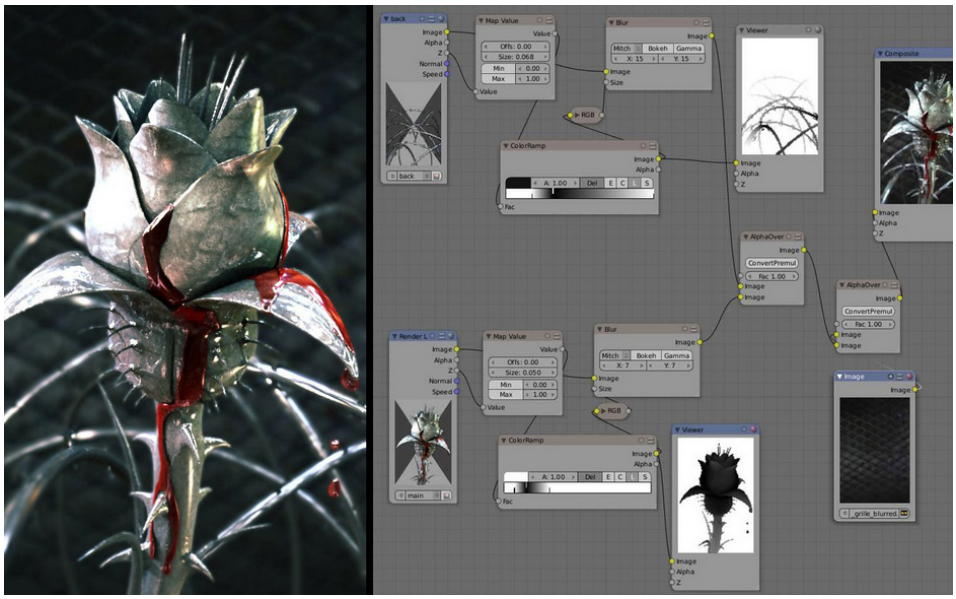




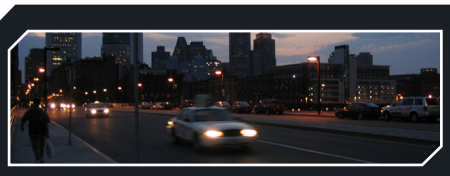
tutorial for new compositors www.blender.org/cms/Blender_Composite_Node.744.0.html. A complete support for the HDR images (128bit/pixel at most), ILM OpenEXR formats, Kodak Cineon and HDR Radiance have also been added. The internal video sequencer editor can now provide almost real time editing, it can work on 32bit images and float at once and allows the interface customization. Fluid Simulation is an extremely important feature for this release as it can now support moving and deformable snags, particles creation in a certain animation time and the vector blur support. The animation slot was already been upgaraded on the 2.40 release







www.blender.org/cms/Blender_2_40.598.0.html. The Custom Bone addition deserves a few words as well: this feature allows complex rig creation in order to manage facial expressions, finger movements, etc. It has also just been released as a stand-alone MentalRay version. For the moment, every kind of light source, some materials, various object properties, GI controls and Final Gather are supported. This exciting experiment could lead Blender into new professional goals. To follow the development and to try the build, just visit http://blenderartists.org/forum/showthread.php?t=74765.

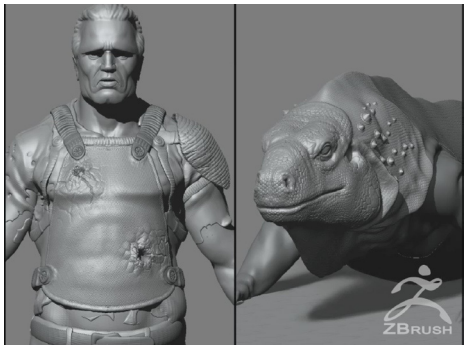


PIXOLOGIC

Pixologic introduced the new 2.5 free upgrade version for the ZBrush registered users. Operative speed is the main new feature, increased with a bigger models manipulation feature, never seen before. Sub Tool now supports millions of polygons and multiple texture objects. Alpha 3D sculpting, full 3D Projection Master power textures and brushes. Mesh Extraction is a new exciting tool for the new geometry from the already existing creation. Topology Projection transfers high definition sculptures from a model to another without losing any detail. Poly Painting allows direct painting on the model without UV and ZCasting for operative session video recording, in order to share them within the massive users community. At the meeting, many well known and advanced users showed this software skills and the famous artist Taron introduced a new plug-in able to connect ZBrush with After Effects'animated tools. The results were amazing. It looks like the company is about to reply to its competitors (such as Silo or Mudbox) with a new, extremely high impact version, on complex models and editing flexibility.

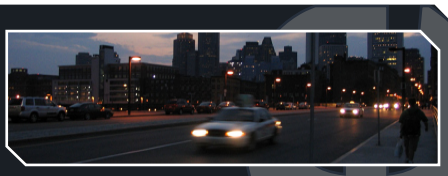
www.pixologic.com











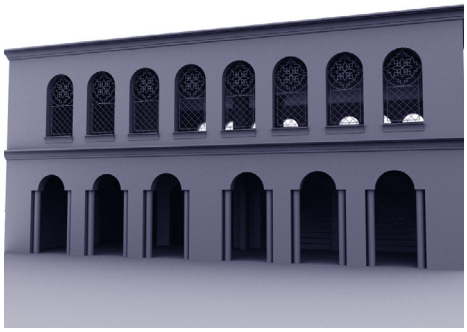
NEWTEK LIGHTWAVE 9

There has already been a great deal of news presented by Newtek itself and external developers regarding the launch of the new Lightwave version: let's start with the sparkling version 9 demonstration. "LightWave 9 - LightWave rebirth!", this version has been improved and it looks like it's the most stable & aggressive. Even if 9.1 has already been announced in order to fix remaining bugs and to keep on working on the improvements, this version now contains a small Modeler's commands part in the Layout. It has new powerful modeling tools such as Flatten, Dissolve, Multi-Shift and Speed Boolean (improved in order to operate with layers), Connect tool and Center Pivot. The Layout module had the highest number of amends anyway, with a huge bugs list finally fixed: complex nodes materials managing, new surfacing features such as Lambert, Minnaert, Occlusion, OrenNayer, Theta and Translucency. Kappa and Omega shading models allow the subsurface scattering (SSS). A stress map shader has also been added, there's a new sketch filter and a new virtual TV screen/mirrors













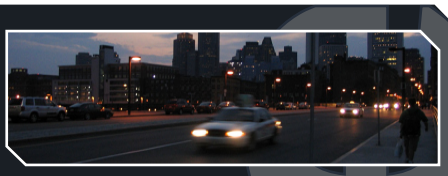
creation shader called CCTV, with multiple cam views. The rendering engine is brand new and constantly under development. Vizier allows the user to have render images or other visual references in the Layout, the fast definition and complex expressions plug-in set Relativity 2 has been included, faster dynamic, new particle systems managing controls, PixieDust for the fast low quality particle rendering, a new Preference panel and a new Global Illumination (GI) tab. The application re-developing process has just begun with this version, but radical changes will be shown on the upcoming free updates (9.x). At the moment, SDK wouldn't allow the nodes materials preview, but a French developer showed a good effort on http://perso.orange.fr/dpont/plugins/nodes/Addition nal_Nodes.html. It wouldn't be a





surprise if FPrime will use the tool, but both the software houses are working in order to make this happen as soon as possible. No problem for the nodal IFW2 version instead, an amazing procedural texture suite, available as an extended version as well (http://www.shaders.co.uk/ifw2_nodal/index.htm). The 2nd LWCAD version (http://www.wtools3d.com) Is a one way choice for everyone into the previous version, in particular for those who work with architecture and design: they will have amazing results thanks to high precision tools, snap and external CAD formats support. We also have to mention Syflex, a great XSI internal plug-in (external for Maya) fabric simulator (http://www.syflex.biz), which was announced as "upcoming" for LightWave 3D. It was shown at Siggraph using a model called Sylene, designed by the well known Steven Stahlberg and animated in motion capture by House of Move (http://www.moves.com). The new KRay 1.7 rendering engine (http://www.kraytracing.com), will add multithreading calculation support, the engine re-developing with upgrades, a new documentation and many upgrades. Newtek has presented its 3D Arsenal as well, a 3D animation integrated system focusing on the moving text and logos quick definition. It's sold for 495$ as a customized version for LightWave 3D 7.5 and for 295$ as predefined material. For 150$ it will be possible to have a first version including 75 scenes mainly developed for wedding movieclips. On the website (http://www.newtek.com) you can find many videos related to the new products and this year` show.

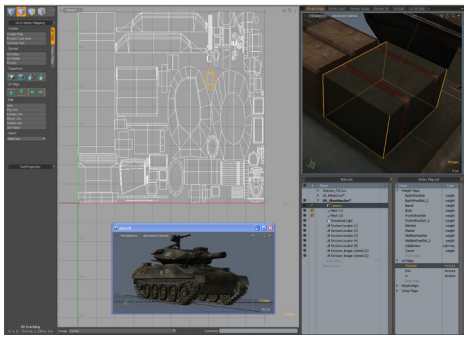
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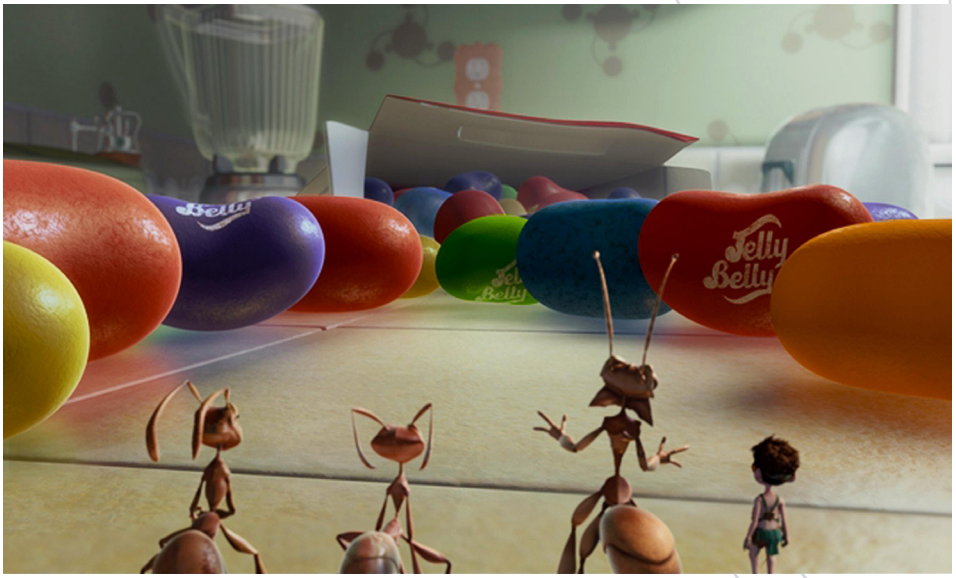


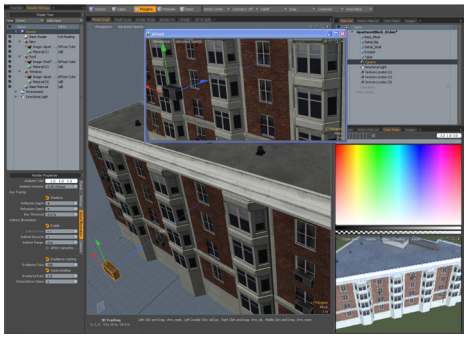
LUXOLOGY

Introduced the new 202 Modo (freshly updated from the already amazing 201) features through the words of Brad Peebler, deputy and co-founder of the studio, Greg Leuenberger (Sabertooth Productions) and Rich Hurrey (Pixar). This is one of the few products presented during this years edition, which will be able to change the 3D graphic process thanks to the two lead developers and LightWave team experience. This subdivision surfaces based modeller basically adds a texturing module, 3D painting and rendering to the previous version, which was just general modelling related. Extremely simple to understand and OpenGI visualization optimized, the software will be completed in a few months, with the 301 release including the animation module as well. The 201 and 202 latest upgrades, obviously extend

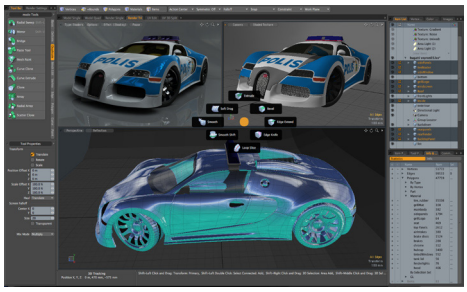














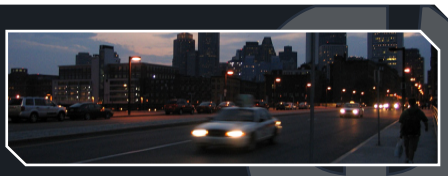




the complex modelling tools range but most of all, they improve the rendering phase enough to consider Modo one of the fastest high quality global illumination rendering softwares. We also have to mention the subsurface scattering support, micropolygons rendering and direct 3D painting in order to place this product between the first lines within its advanced competitors, but with just a 895$ price: one of the cheapest on the market. A 30 days fully working Modo version is available on the website. A valuable plug-in called imagSynth also comes with the package. This Photoshop tool is needed for high quality seamless texture definition. Developed along with Allegorithmic, this plug-in is also sold separately (directly downloadable from www.luxology.com/ store/ imageSynth.aspx) for 99$ (Windows and Mac).















CEBAS

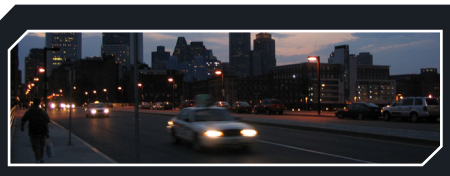
Cebas has finally released its rendering engine finalRendering, as a stage-2 version for Maya as well. The German software house has also shown the upcoming finalRender Stage-1 R2.0 release for 3DS Max. The new upgrade includes the new Global Illumination engine, developed in order to gain speed and performances during complex animations. They also introduced ThinkingParticles 2.5 (still for 3DS Max). This free update brings new features and fixes some bugs for the users who already have the previous version. For the first time it's been shown to have the perfect integration within the phisic simulation system AGIEA, wich allows the user to manage real time collision detection particles system, with the adding of a PCI video acceleration card. But getting back to finalRender stage-2: The engine supports Maya versions from 6.5 to 8, 32 and 64 bit. The product is based on the global illumination calculation, proved to work quite well thanks to the reduced processing time and lack of flickers. It has an advanced Texture Baking, optional SDK shader, network distributed rendering, 20k+ rendering, HDR OpenEXR files support, photometric lights, shadows calculating real light area, particles rendering, milions poligon rendering, mulyiple real cameras, NURBS fast and advanced tiling. A new section has just been added to the website for you to enjoy the main upgrades directly on flash movies.

www.cebas.com



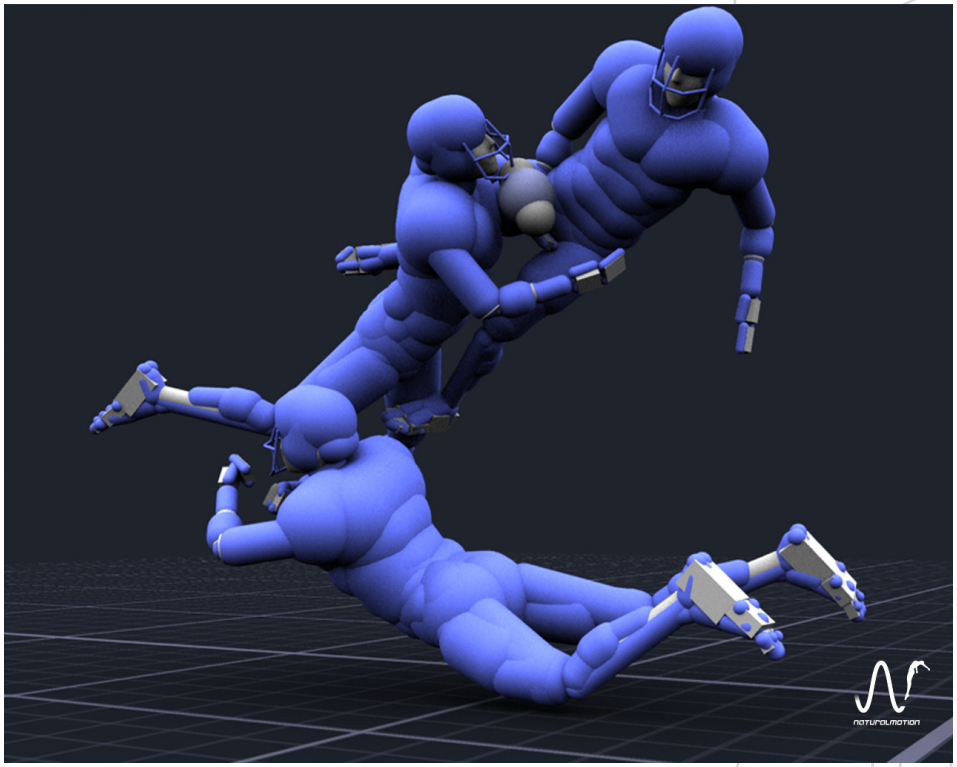


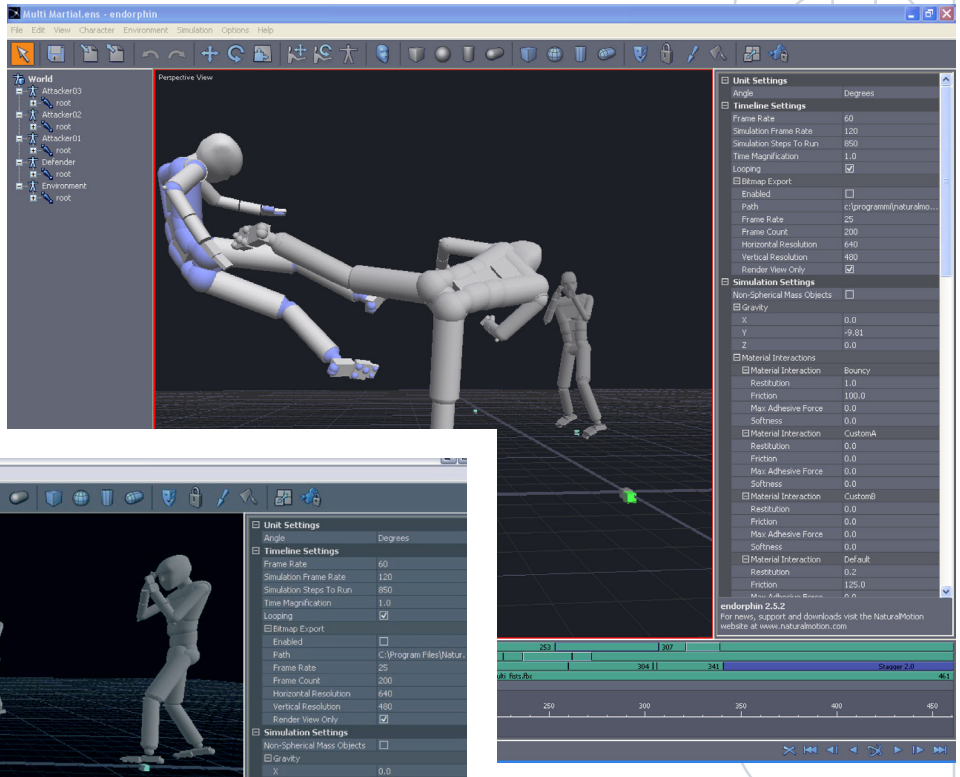


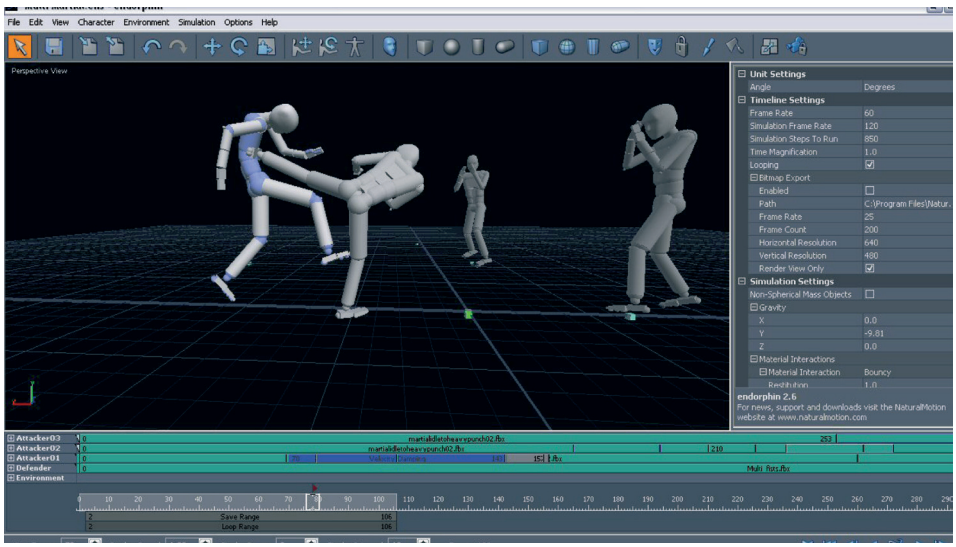


NATURAL MOTION

Natural Motion introduced Endorphin 2.6, an amazing dynamic motion synthesis based software already used in many multimedia productions (from movies to videogames). We can find fully interactive adaptive behaviours, used from the 3D characters to animate themselves. Those controls are realtime and by changing parameters and actions, it will be possible to see the results imediately. Once this is done, we can export what we obtained in different formats in order to use them in our productions. The 2.6 version will be also downloadable as a sample and will contain new tools and documentation. The software house release two more products: Euphoria (available from october), wich will bring Dynamic Motion Synthesis revolution onto Playstation 3, XBox and Pc, and Morphene, wich will bring the Endorphin generation engine with a runtime module. www.naturalmotion.com

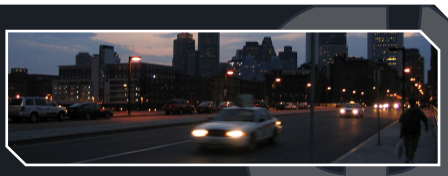










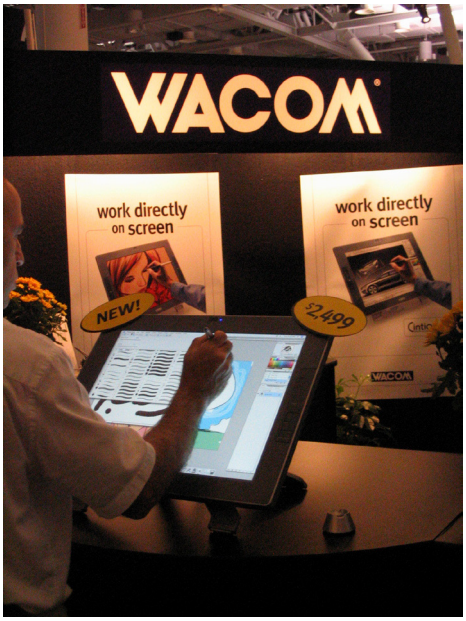


HARDWARE

Many stands were using HP or other graphic workstations, but obviously ATI and Nvidia had the biggest slice. ATI (wich is currently under offer from AMD) introduced FireGl professional solutions, while nVidia showed the Quadro Plex program. Its first version (Quadro Plex 1000) will be available for Windows and Linux systems in September, with 32 and 64 bits AMD Intel processors as well. They will be a slot of parallel working Quadro cards that will guarantee a visualization power never seen before in 3D softwares and heavy graphic use applications. Price is not cheap afterall, and it will be $17,500. Last words are for Wacom tablets, wich will allow virtual drawing directly on a flat screen, and for BOXX Technologies workstations (http://www.boxxtech.com), based on AMD and Intel chip as well. They're also fully customizable from the website and one of the best advanced graphic choice, and not just as desktop solution.









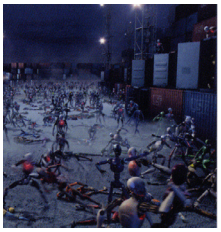
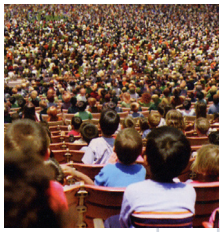






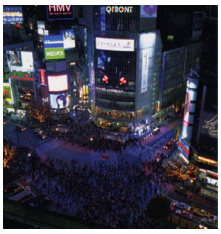
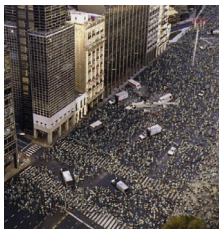
MASSIVE SOFTWARE

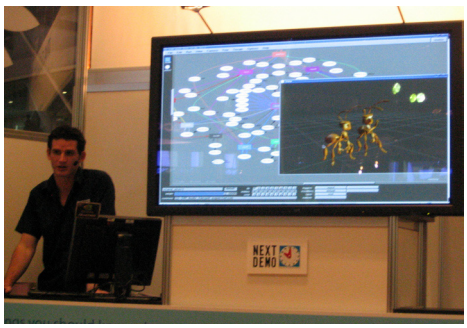
The Weta internal New Zealand studio introduced its well known crowd simulator software used in many movies and commercials. The Massive Prime version (17.999$) is the complete solution to direct, edit and render thousands of independent agents. There's also a smaller version called Massive Jet (5.999$). The Prime version includes an agents movement editor (Motion Tree) , a Brain Editor in order to decide the agents behaviour through a nodes based interface (so it doesn't need any programming), a clothes editor and the possibility to import animations, skeletons structures and Maya importable motion files. It will also be possible to buy student versions, auto-learning kits and even modelling and texturing ready made agents.

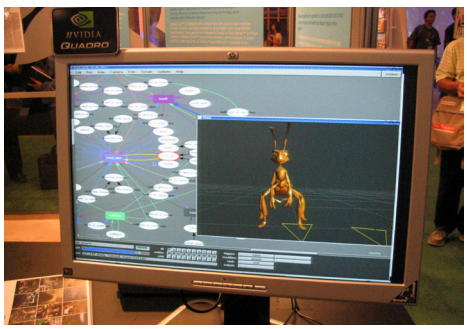


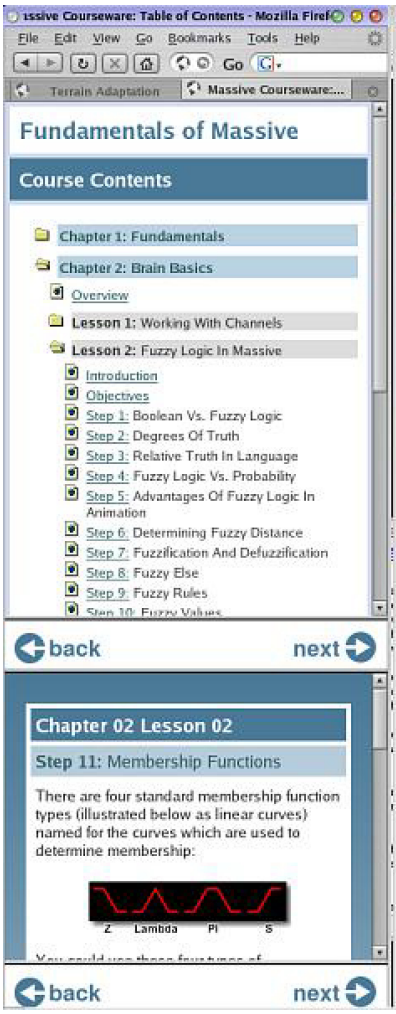


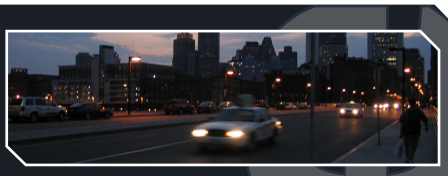






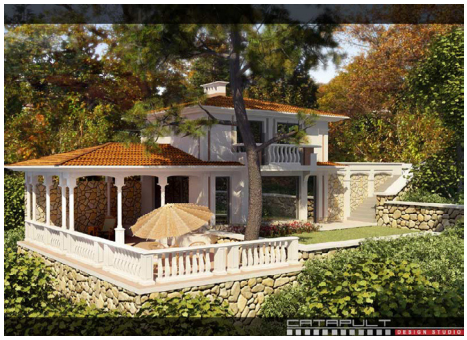






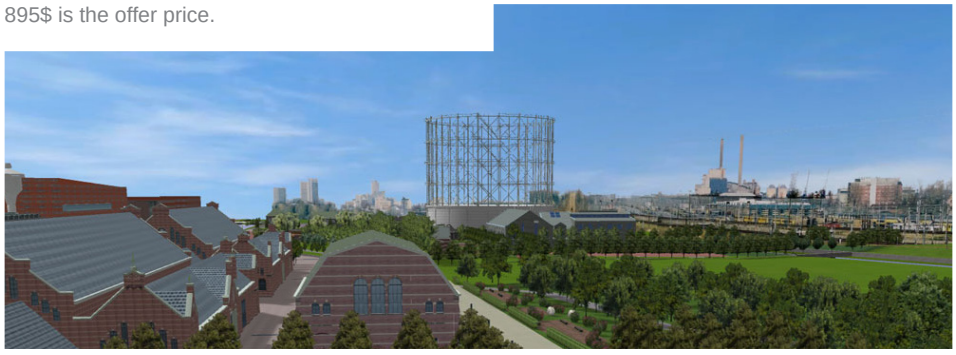
ARCHITECTURE

The complexity of 2D and 3D visualization always already influences any architecture project, from the concept to the end. One of the most productive software houses is Vismaster (http://www.vismasters.com), who specialise in high quality architecture productions, also selling tools such as rendering engines, objects and texture collections and plug-ins. Another high standard studio is Spine3D http://www.spine3d.com. On their website it's possible to find some stunning images and animations as well. Quest 3D introduced their Movimiento 3.5 version, with a node based interface helpful in 3D tracking. RealViz have worked together with Autodesk in order to give to 3DS Max and Maya users the opportunity to get a free automatic 3D tracking copy, usually sold for 490 euros. Last, but not least, the Photomodeler 6 release: well known software used for the 3D model building starting from simple pictures. The new version includes a more realistic view camera, primitives shapes (in order to have a easier fitting between the picture and the 3D model), Maya and Google Earth export features, markers automatic processing, improved 3D view managing, picture masking and a better graphic interface. 895$ is the offer price.













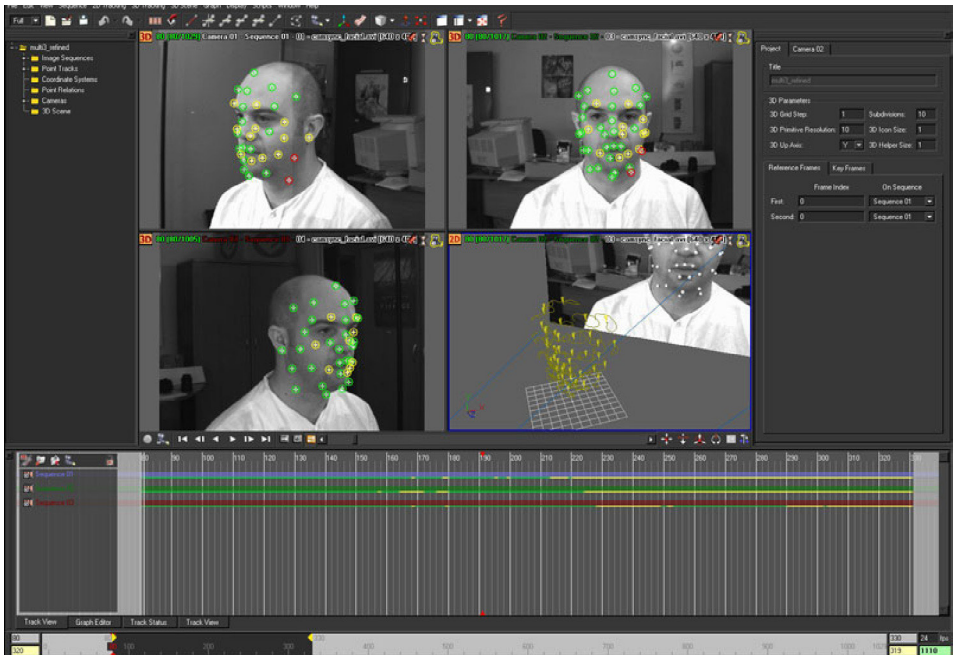


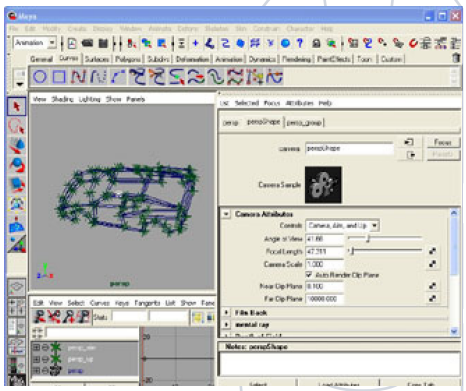




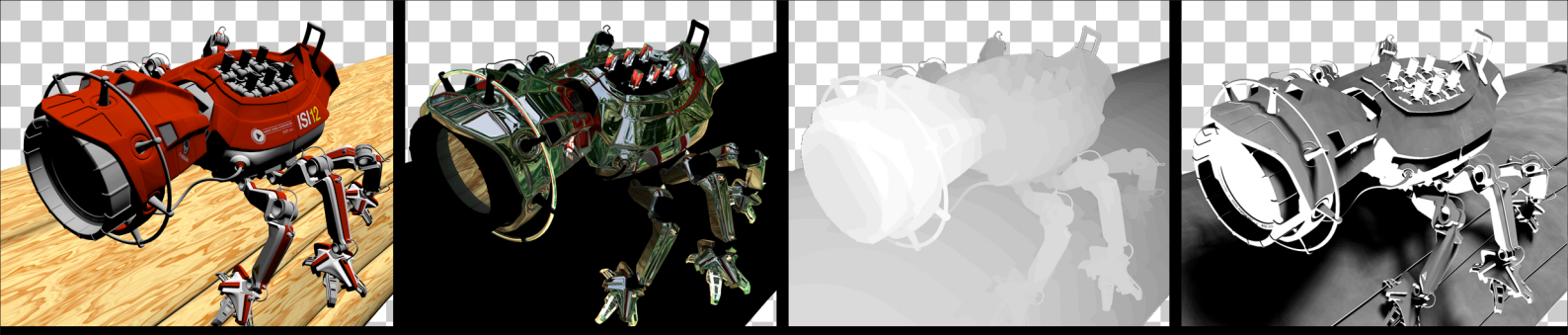








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THE POWER OF LAYERS



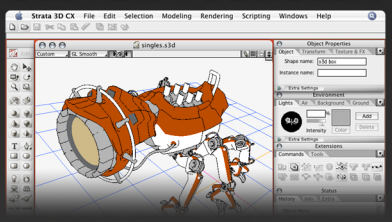
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DESIGN AT A HIGHER POWER

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Digit named Strata 3D CX the number one 3D app for designers, and awarded it "Best Buy" in its 3D Design Software Shootout.

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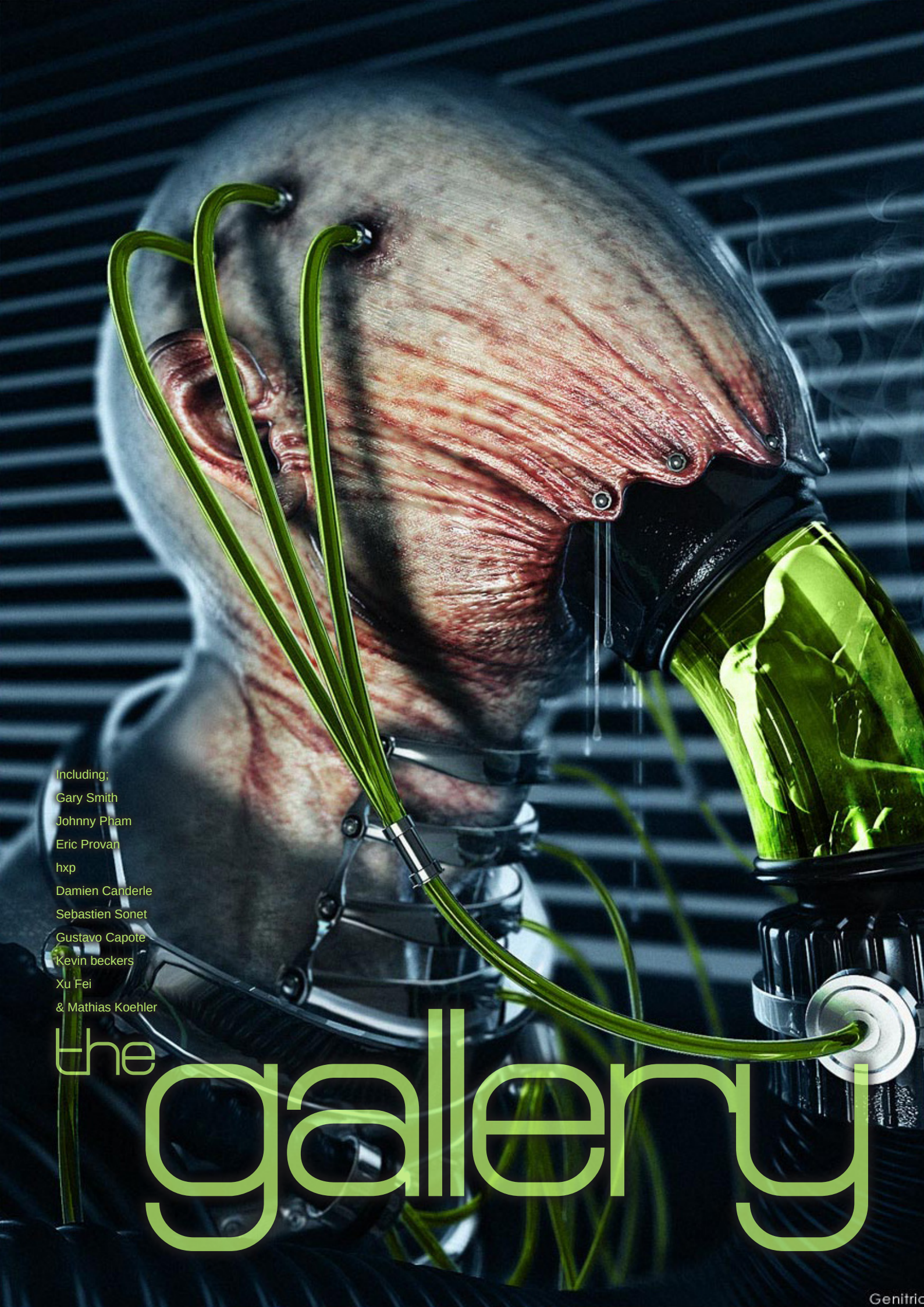


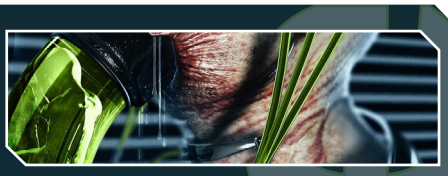
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The Waiting Room: Day & Night

Gary Smith

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Yumi

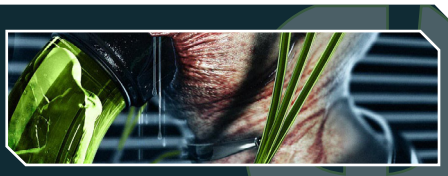
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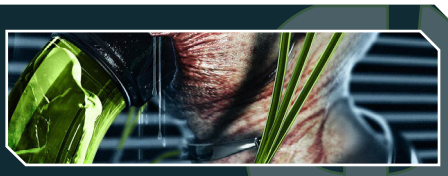


LIVING DAY

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Flower

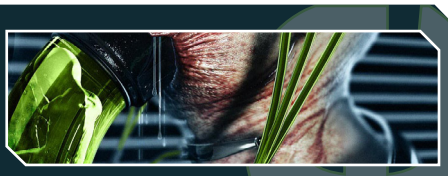
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Upside-Down

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Follow the 'Making Of' these images later on in this Issue of 3DCreative magazine...



Smiling Goblin

Damien Canderle
Canderled@hotmail.com
http://www.maddamart.com

Pixologic

makers of ZBRUSH



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ZBRUSH

"ZBrush has initiated a renaissance on sculpture. It's the fist and only sculpting software that gives the artist freedom to work creatively without the constraints of conventional modeling packages also eliminates the need to work with phsically based maqettes because it is, better than clay, more intuitive to use, and far more productive."

- Geoff Cambell, ILM Senior Model Supervisor



This month and last, artist Siku takes us through the process of texturing a stylised cartoon character. In this example, a Basketball Player created for a Game scenario.

Texturing Masterclass

Cartoon & Stylised Characters

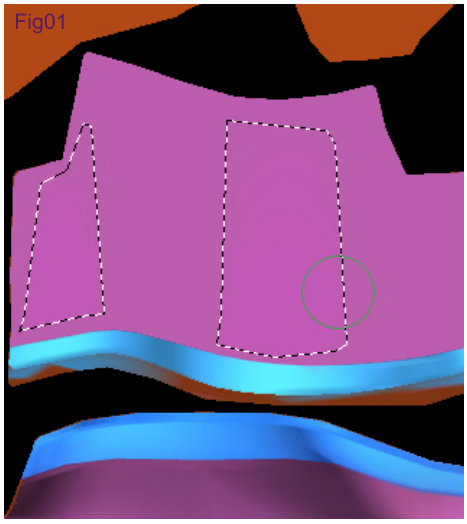
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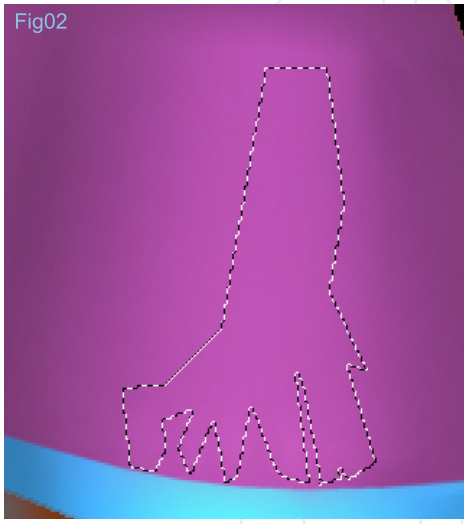
Finishing the Shorts

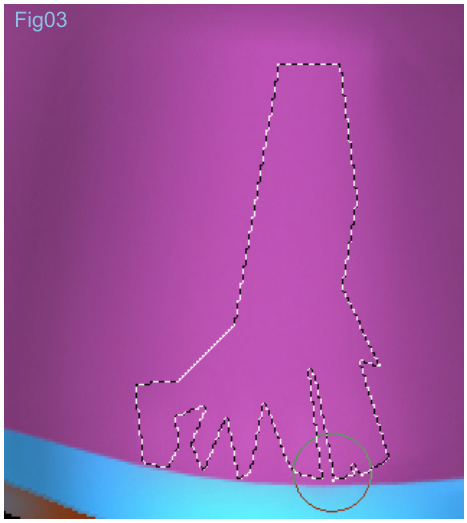
One of the tricks with masking (and there are several) is to invert a selection. This time I am shading the outside of the mask with a darker shade. (Fig01). Again I have motion blurred it and drawn now with a selection to mimic seam tension. (Fig02). Shade with a large airbrush size accordingly. (Fig03 & 04). I have 'wind' blurred it and reduced the opacity of the layer so that the folds are subtle suggestions rather than hard drawn lines. (Fig05)



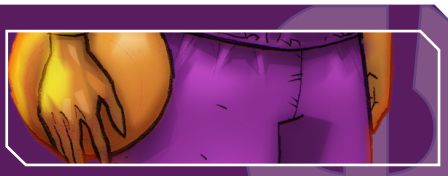












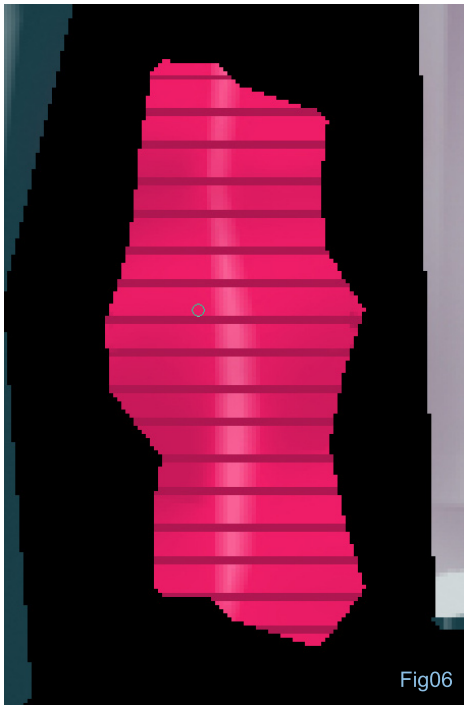
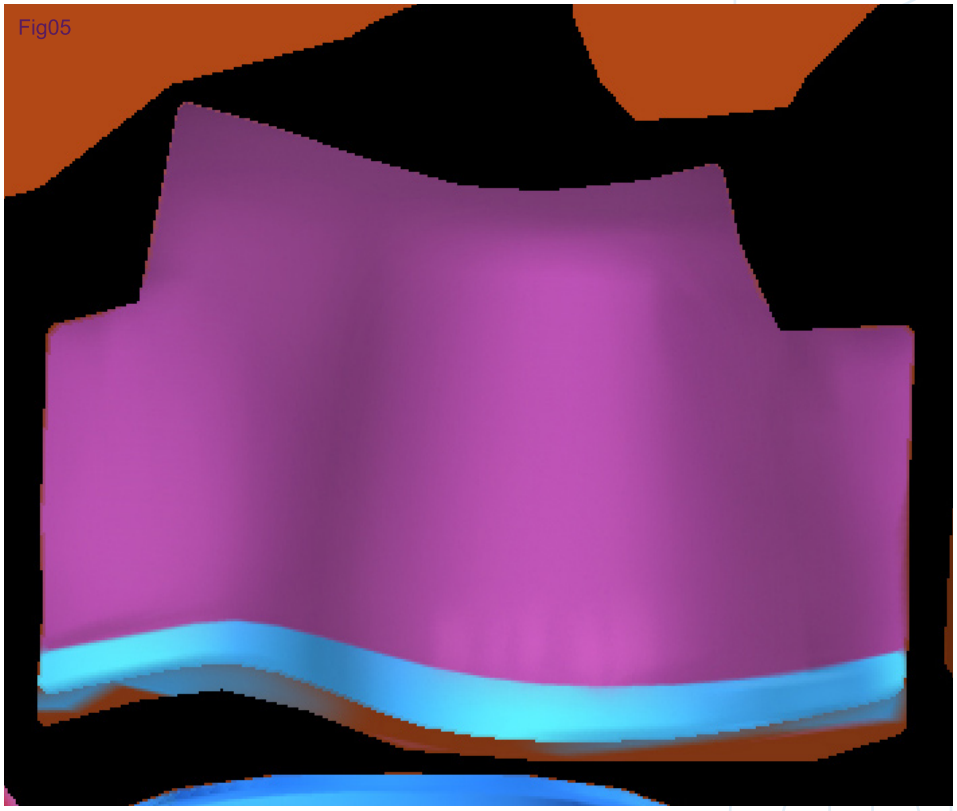


Fig06

Fig05



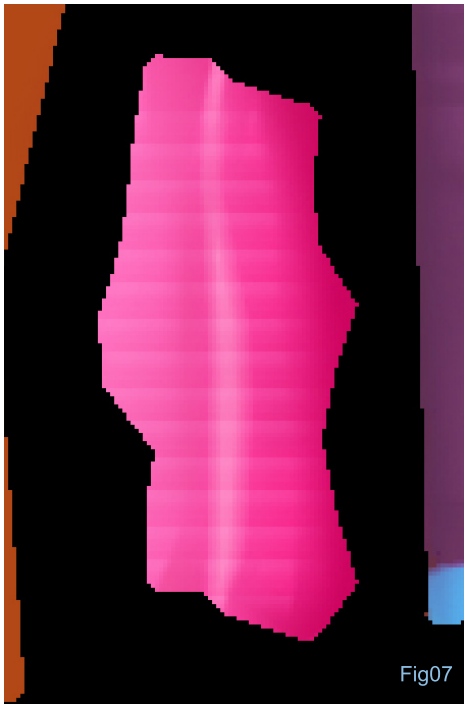


Fig07

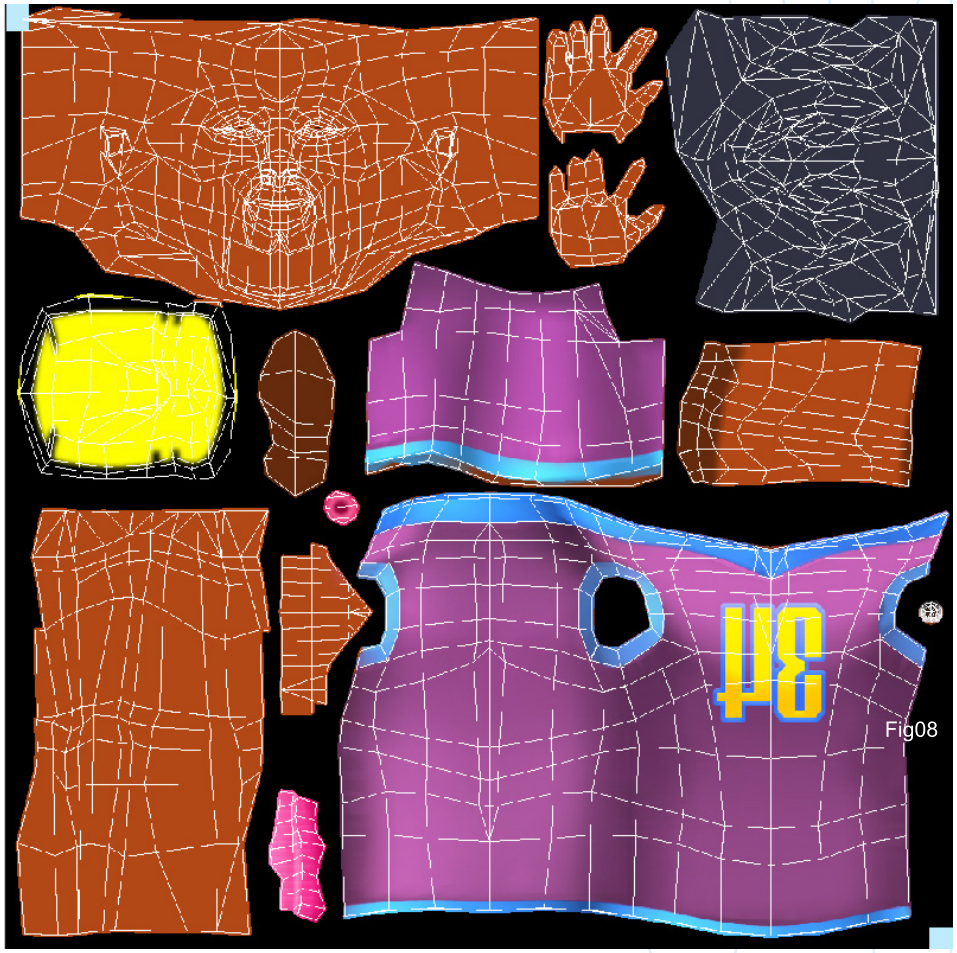


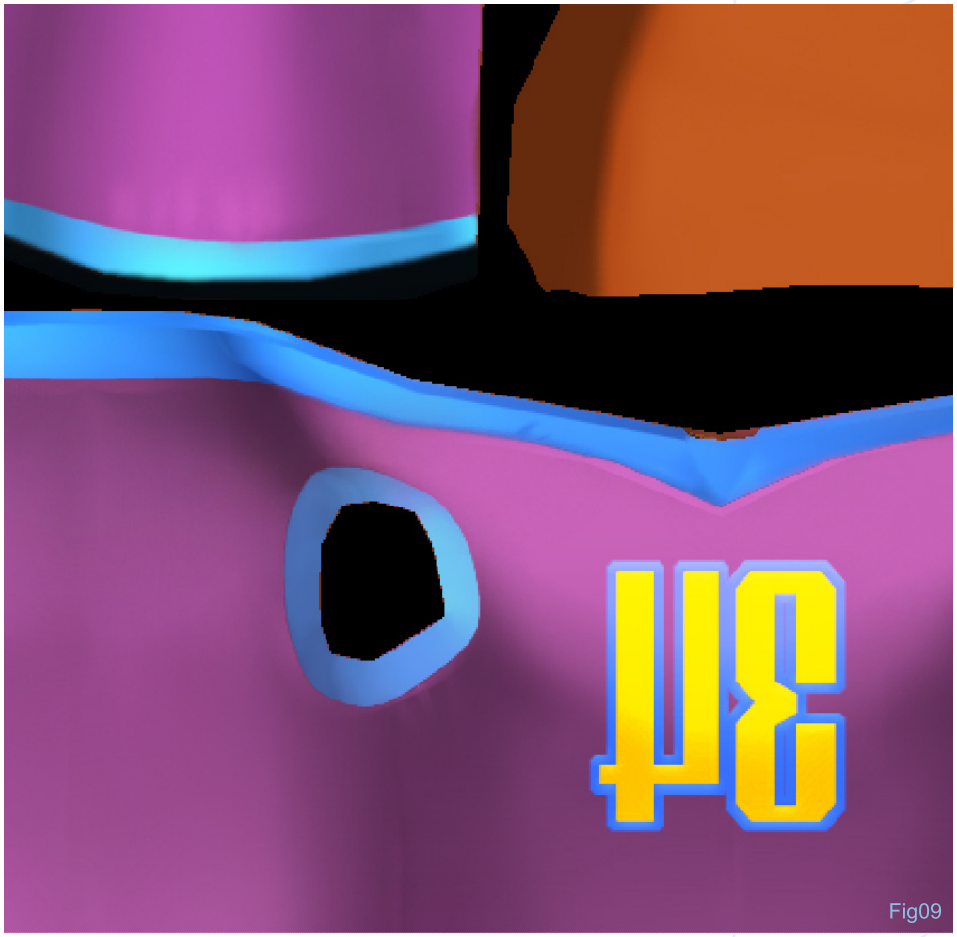
Fig08

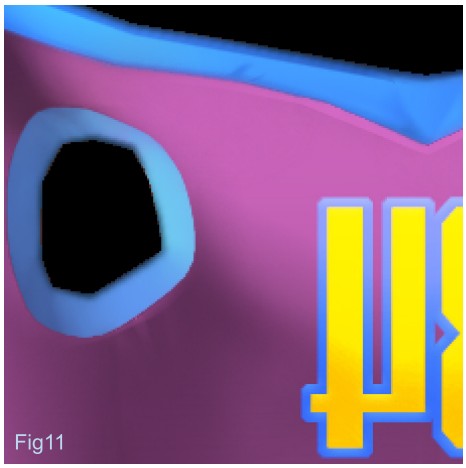
Socks

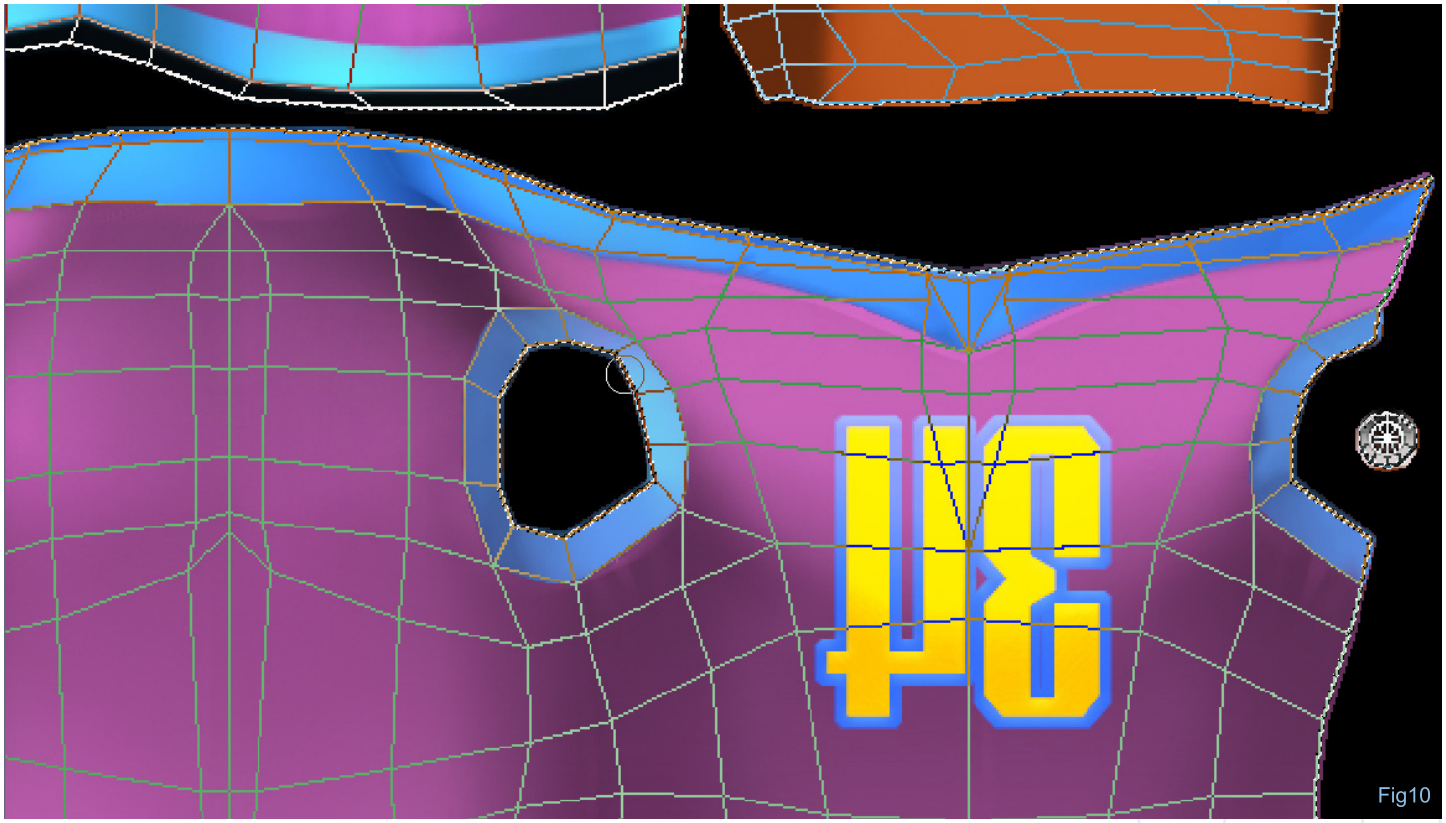
Keeping our lines and tones consistent, clinical yet soft and warm is my aim here. So I have drawn the lines on our sock using stroked lines. (Fig06). With the use of the Layer style blending options, I have embossed and blurred our lines. There are other screen and normal layers for the other tones. (Fig07). So far. (Fig08)

Shirt Edges

I pointed out earlier on that attention to detail is the secret of convincing textures. The trick is to make it look simple and uncluttered. Adding an extra dark shade around the edges creates a more 3D feel to the cloth wrapped around our basketball player. (Fig09). Using the textporter map, select the outer edges of the jersey. Select>modify>contract the selection, shade and blur slightly. Remember to use large airbrush sizes for consistency. (Fig10 & 11)


Fig09


Fig11


Fig10

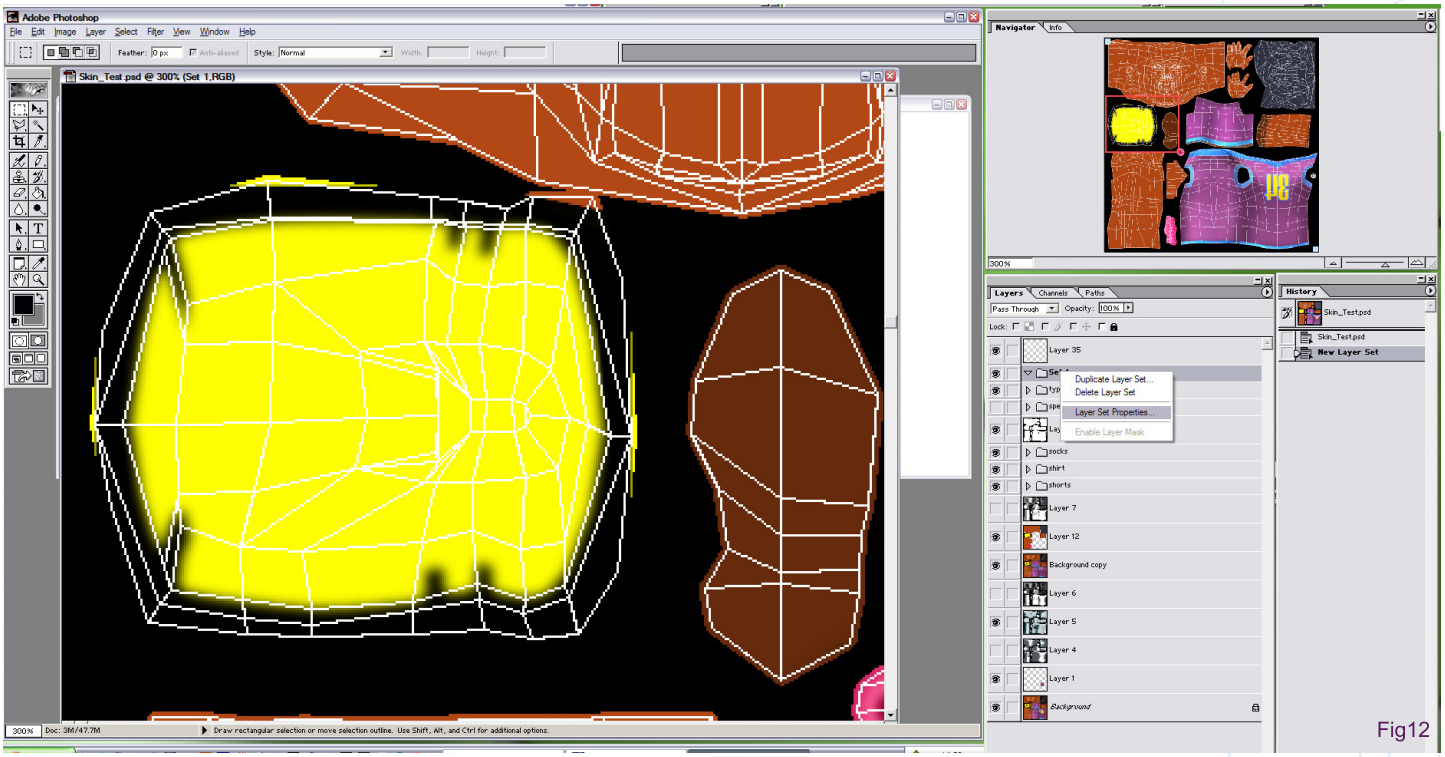


Fig12

Shoes

You may have noticed that I create folders for my layer sets. It makes it easier to organize those hundreds of layers. You will never have to go searching endlessly for that layer again. (Fig12, 13). Using the textporter map as my guide, I can create the shoe details. You can see above how making selections then reducing them, inverting them and making another larger inverted selection can create varied masks for painting. (Fig14). I have used here more or less the same techniques in this tutorial to paint the shoes.

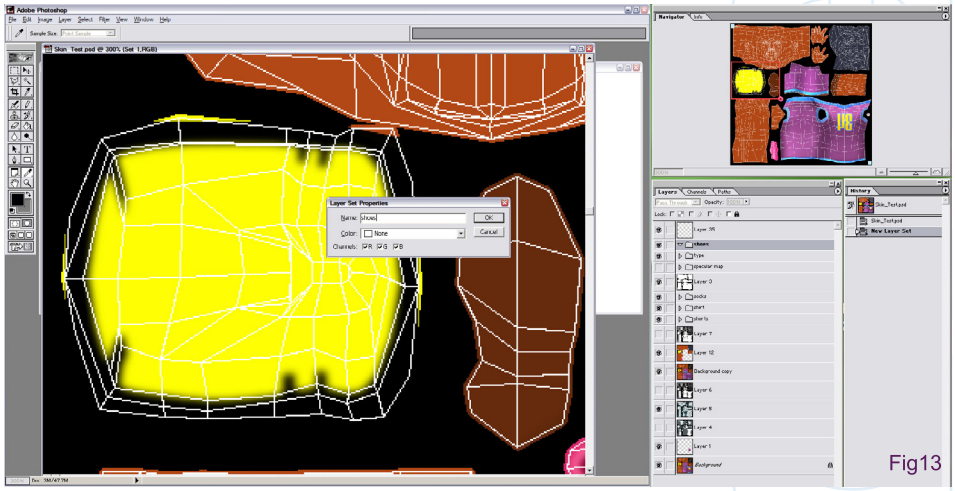
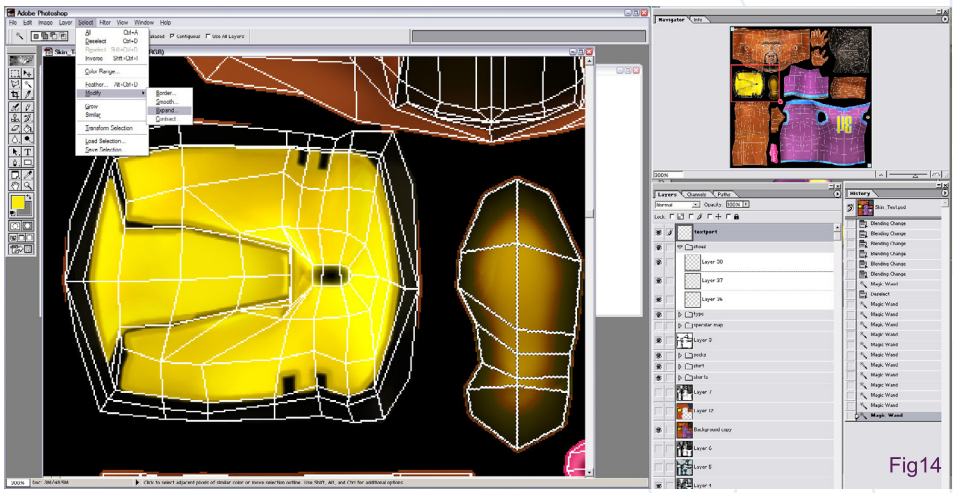


Fig13


Fig14

Skin

One of the trickiest elements to paint is skin. I will the baked map as guide for form. It will be useful for detailing the nose, eyes and ears. I do not use photographs for the base, as I want a none-realistic look. (Fig15). As usually I start with a mid tone base colour. Using the baked map as a guide, I select my eyebrow and shade in. After you have blurred it to soften the lines, copy the layer and horizontal flip the layer. Move into position and layer merge with the first eyebrow. (Fig16). All my tones are done using masks and broad brushes. There are painted on one side, layer copied and flipped. This way, I have exact tones on both sides of the face. (Fig17). Do not be tempted to add too many highlights, as the face will look made-up with face powder on the model. Tame the tones


Fig15


Fig16


Fig18


Fig17


Fig19

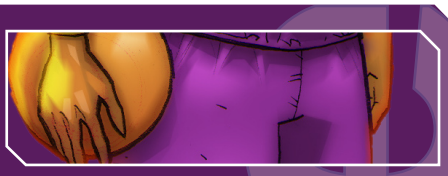






Fig22



Fig23



with motion blur filters at different angles on the on separate layers. (Fig18) . After merging the layers according to groups; mid tones, light tones, dark tones etc. I now add the final highlight. Again, I paint within masks with a large airbrush size. (Fig19 & 20). I gently motion blur my layers adjusting opacity levels to get gentle tones with character. The character comes from using masks and wind blur filters. (Fig21). I constantly check with my model the results of each stage of my process. Here is the final output. There is a specular map here which accounts for the yellow shine on his face. (Fig22). Final clean layer (Fig23)

Adding Noise

This texture map is done but a gentle noise filter added to the map will give the map a fluffy warm touch. As usual, I add only a touch, barely visible yet felt. I want to avoid any obvious stretching. Stretch on a skinned and animated character will occur if the noise clearly visible. (Fig24). Final map with noise. (Fig25)

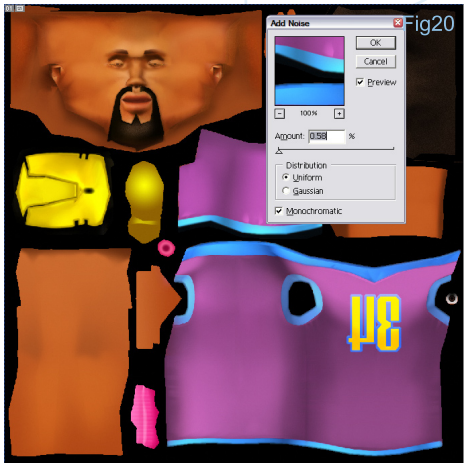


Fig20

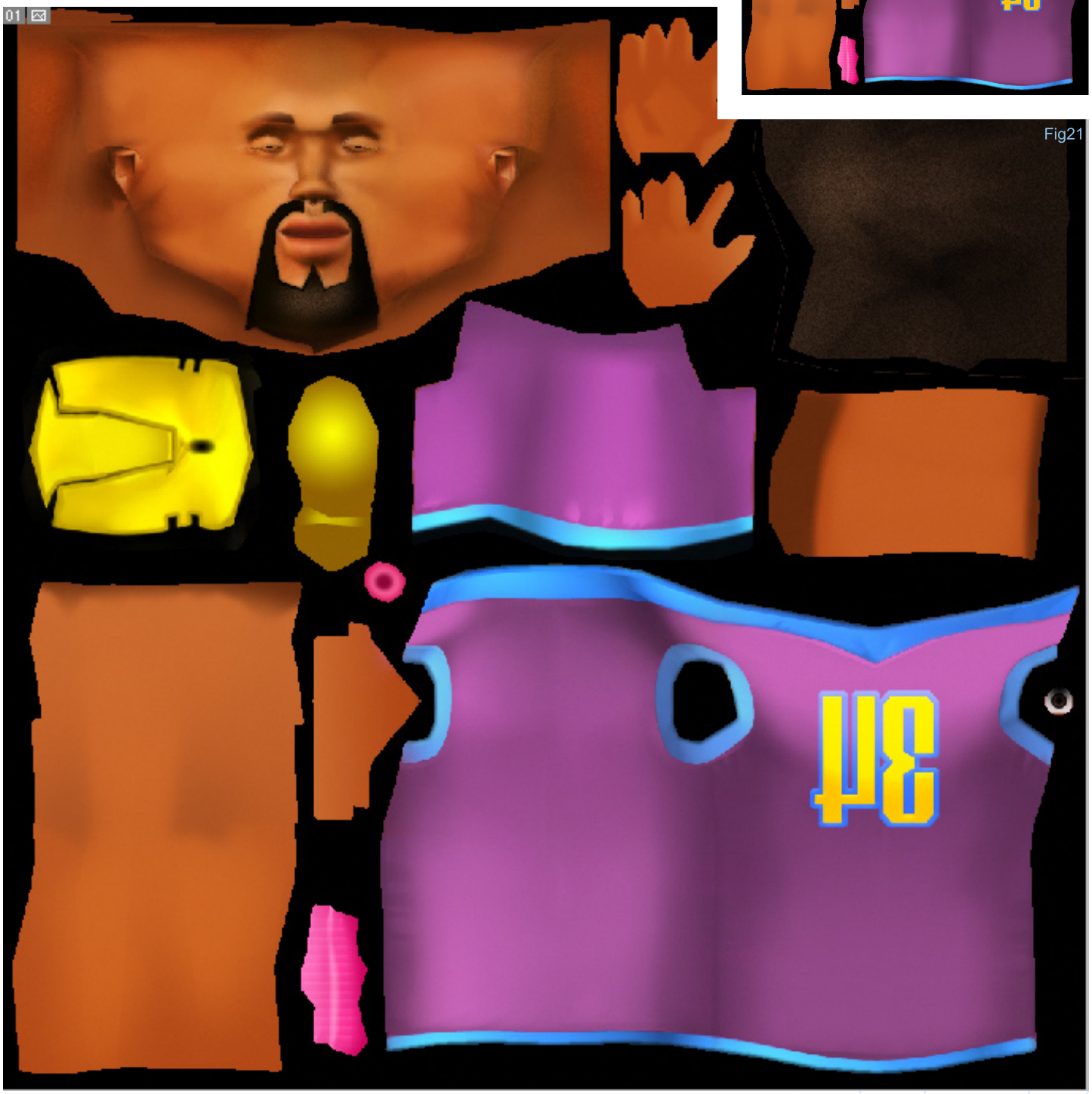
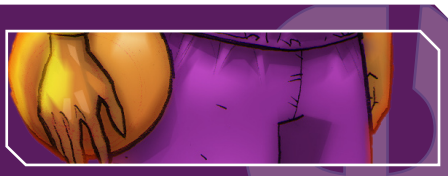
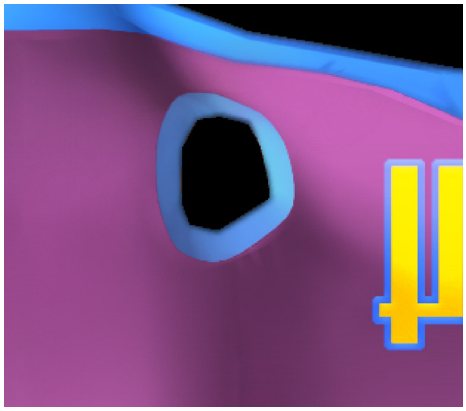


Fig21



The Clean Map is shown in (Fig26 left) and the Noise Map (Fig26 right). In our close-ups (Fig26), you will notice no artifacts, hand movements, inconsistencies or harsh lines. Everything is gentle, warm and soft: perfect for caricatures in this style.



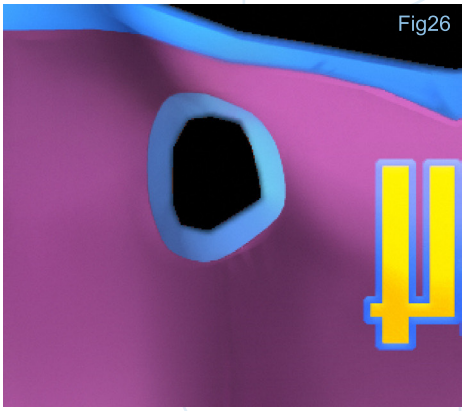


Fig26

Making up my mind about that text...

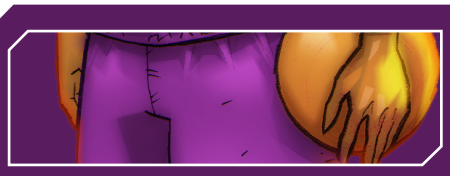
this…(Fig27)…or that? (Fig28),



Fig27



Fig28



FINAL

There are no Photoshop retouchings in these renders.

SIKU

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Stylized Game Character

Welcome to our ongoing tutorial which will provide a step by step guide to building a low poly character based upon a model by Seong-Wha Jeong. Over the next eight months we will be covering how to build, map/unwrap and texture the character.

3DSMax Version
Page 129

Cinema4D Version
Page 149

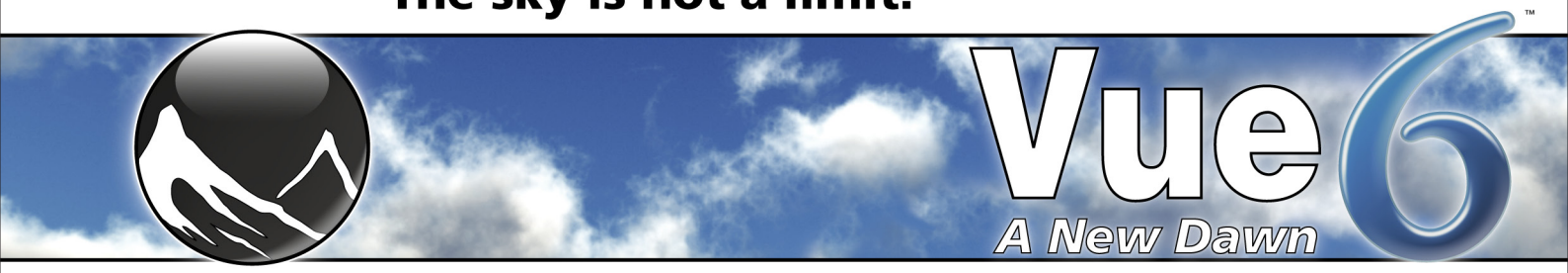
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Page 168

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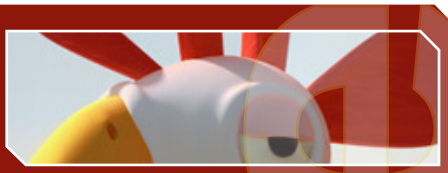
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I find the creative process for character design very satisfying, and I always do extensive research on most projects before starting any 3D activity. However, I applied a slightly different approach for this piece of work. I followed an alternative method in order to trigger my imagination, rather than aim for perfection or accuracy of the references. I find this process quite valuable, especially when I want to condense character emotion and essence into simple forms.
RUSTY
BY CESAR ALEJANDRO MONTERO OROZCO



RUSTY

CREATIVE CONCEPT

Before putting pen to paper, I thought about the feeling and emotion I wanted to represent with the character. I then made simple strokes that would represent the emotion I'm looking for. I start, as most of you, with a pad of paper, but instead of using a pencil, I use a pen. By using a pen, I make myself repeat a stroke when I think it does not represent the feeling I'm looking for. The repetition of the stroke refines it, and triggers imagination on each repetition. I wanted to create a character with elegance and confidence. I also wanted it to have a touch of humour. I took my pen and started doodling curves. I came up with an S form, and right away I was able to imagine different animals from this curve. I thought first of a sea-horse, a serpent, a duck, and a rooster. I chose to make a rooster. I chose to make a rooster with a twist. A rooster is normally portrait as a representation of masculinity and confidence. I wanted to create a rooster with those and other qualities that would make him unique. I wanted him to look cute and lovely, instead of aggressive and cocky. The following image shows some sketches of the early design stage. This shows that I was focused on the "S" curve. In this process I came up with the rooster idea, as well as other ideas that triggered other characters and projects. (Fig01).



Fig01

MODELLING

I began the rooster by making the "S" form for the body. I made the beak as a separate mesh. The beak is big and gives him strength. I made him a simple crazy crest. It is simple, and it breaks away the formality and elegance of his body. I gave him small feet to make him look delicate. I added a big eye socket to give him a strong personality. The detail on the neck gives him some elegance. At the end, I tweaked certain parts to accentuate his personality. (Fig02). Once Rusty was finished, I didn't know what shot angle I wanted for Rusty. So I created his environment first. I made him a barnyard. It takes more time to do all the environment first, and then decide what part of the environment to show. It however, gives you more freedom in experimentation. At the end, I chose from several camera shots the one I like the most.

Here is an image showing the barnyard. (Fig03). Once the barnyard was finished, I made some mountains. Here is a small explanation on how I did them. A similar process can be applied to other objects to make them uneven. I started with a 1 km plane and divided it 10 times. To make the plane, I used the toolbox and I specified there the number of divisions I wanted. (Fig04). To create the bumps I used a tool called "Jitter". This tool "shakes" the polygons

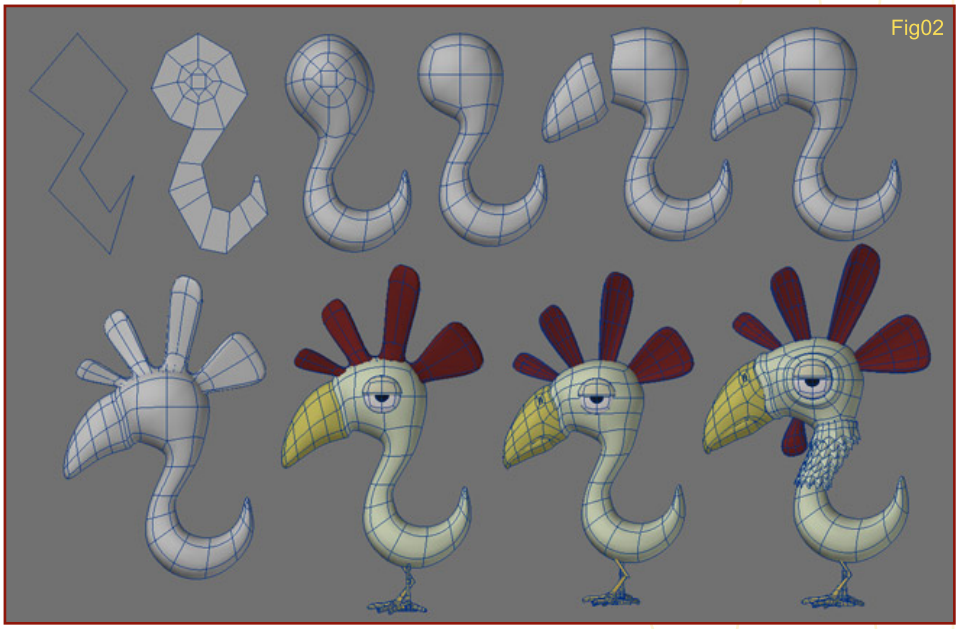
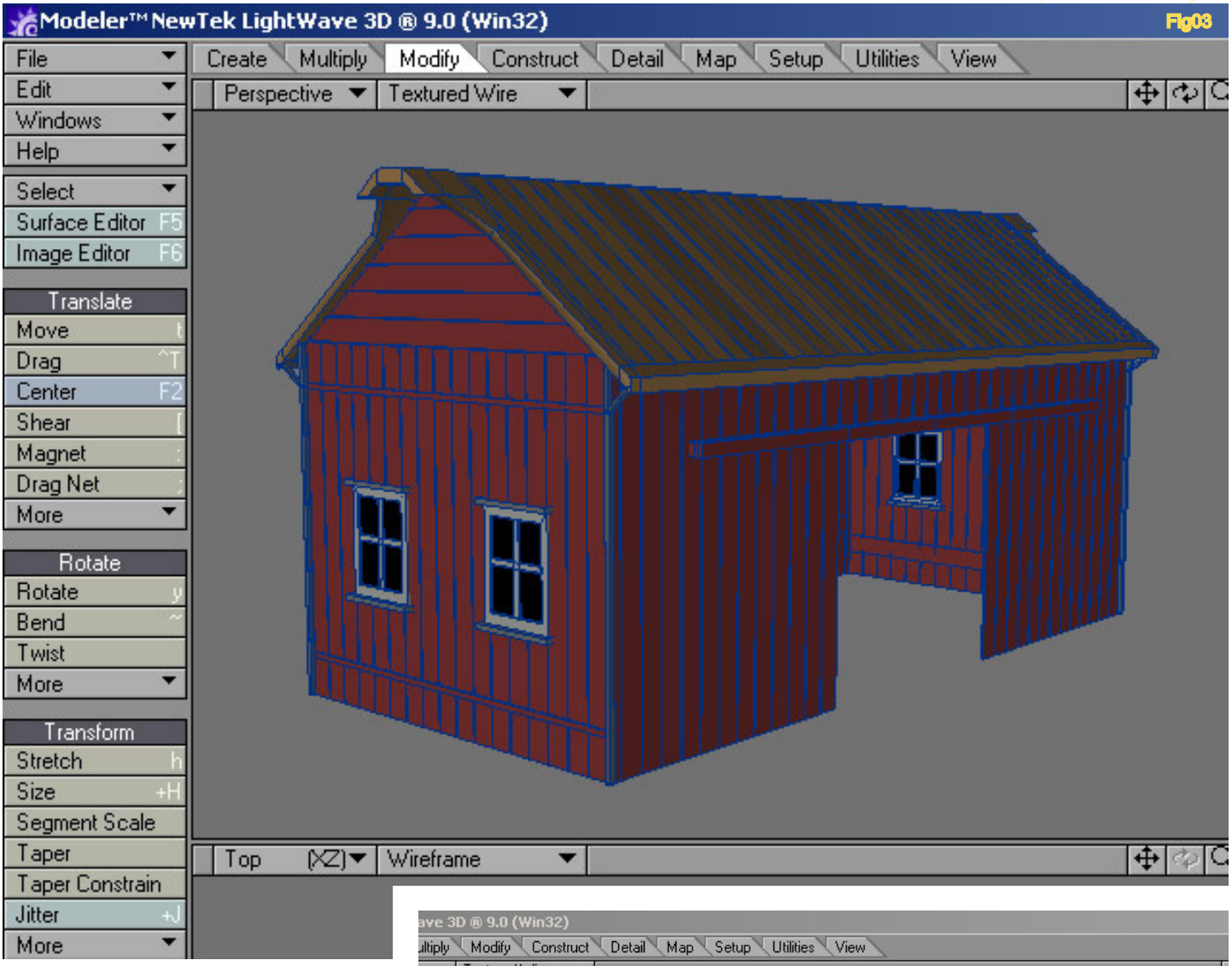
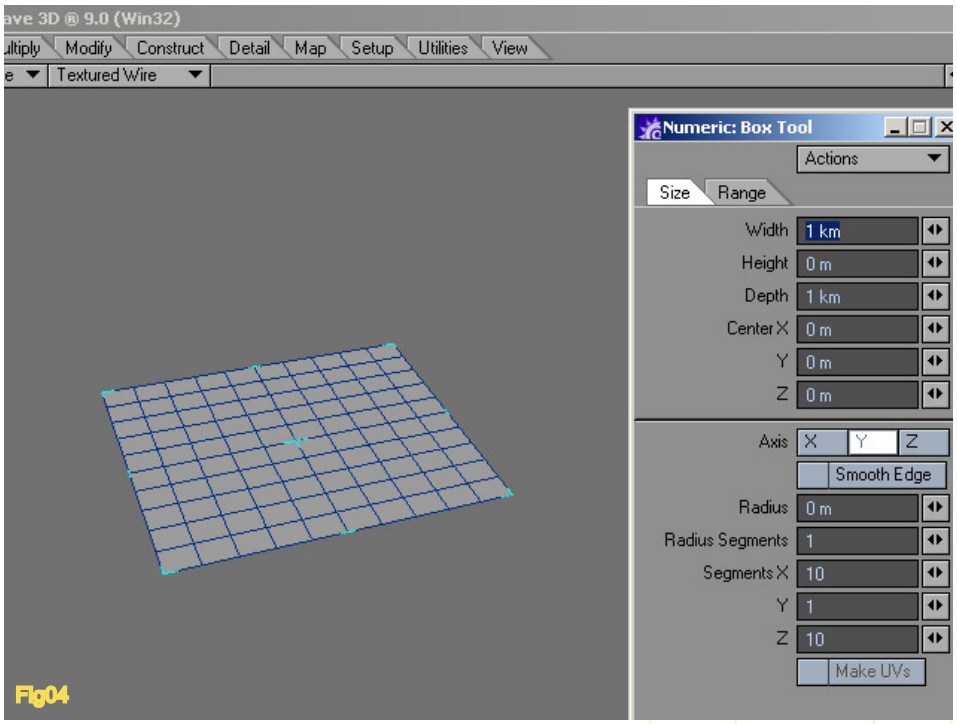
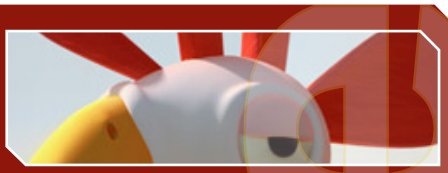


Fig02



or points selected, making the mesh uneven. I used a “Normal” type of Jitter. “Normal” stands for the type of movement that will be done to the selection. Normal Jitter displaces the polygons along the normal axis of the polygons. This way the polygons will move up and down, but not sideways. (Fig05). Once I had the bumpy terrain, I realized that I wanted part of that terrain to be flat. I selected the middle points of the plane, and used the “Stretch” tool to flatten the middle area. (Fig06). I then realized that I wanted the surrounding terrain to look more bumpy. With the points still selected, I inverted the selection of points, and applied once again some Normal Jitter. (Fig07).





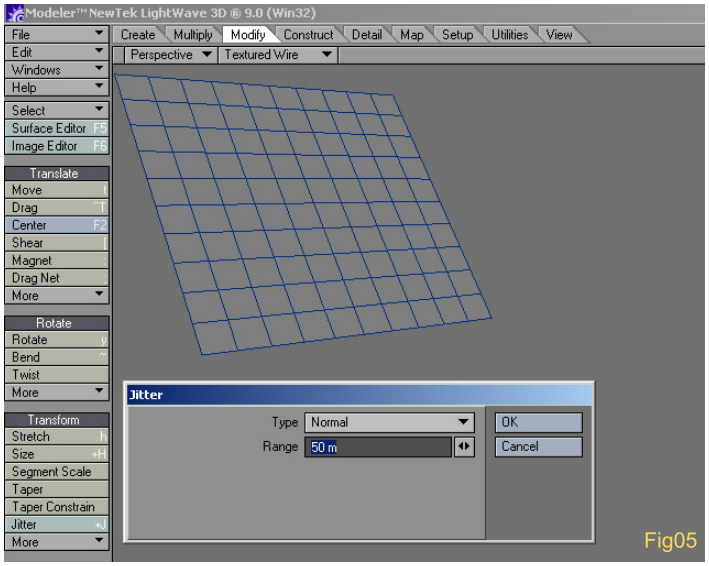


Fig05

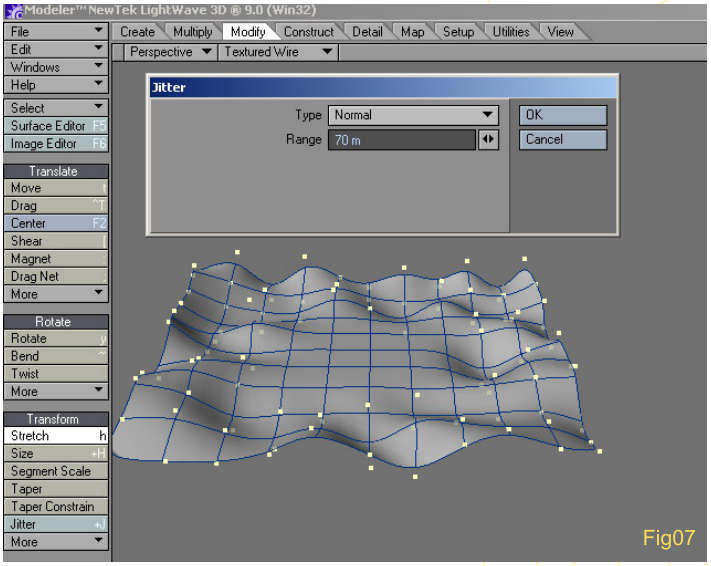


Fig07

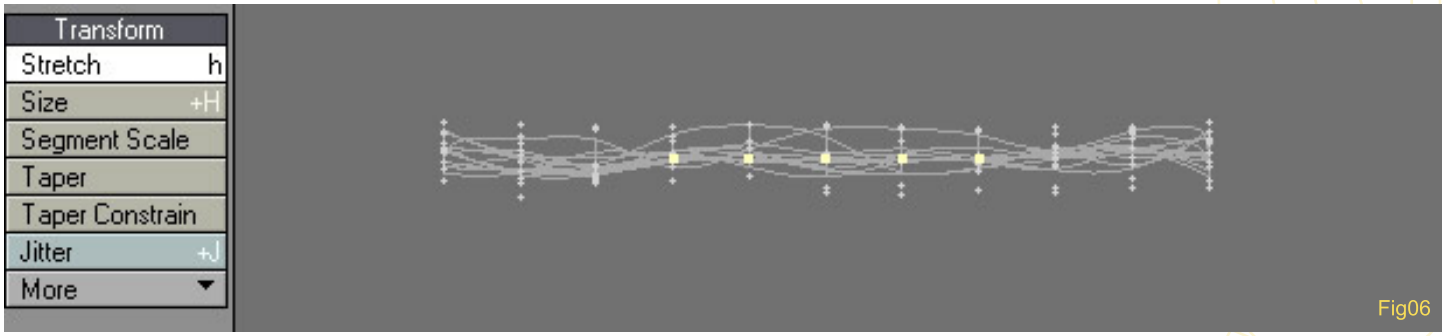


Fig06

LIGHTING

I used FPrime 2.1 to render it. It is very easy and fast to use radiosity and Global Illumination with FPrime 2.1. I used 3 bounces for the 3 lights in this setup. The GI (Global Illumination) is a combination of blue and pink. The light on top gave me some good contrast and ambient shadows. While the lights on the right where used to create a Sun. The little one projected the strong shadow. The yellow big light on the right was used to create a sunset feeling. (Fig08). To tweak the intensity of the lights I use a process similar to one applied in real life. With a real camera, we can tweak its settings in order to get what is called “White Balance”. In real life we use a neutral gray card (128,128,128 in RGB), and position it in front of our camera. We then zoom in, and balance the camera settings in order to make that card appear almost white in our viewer. It mostly involves tweaking the aperture, exposure and colour balance. This

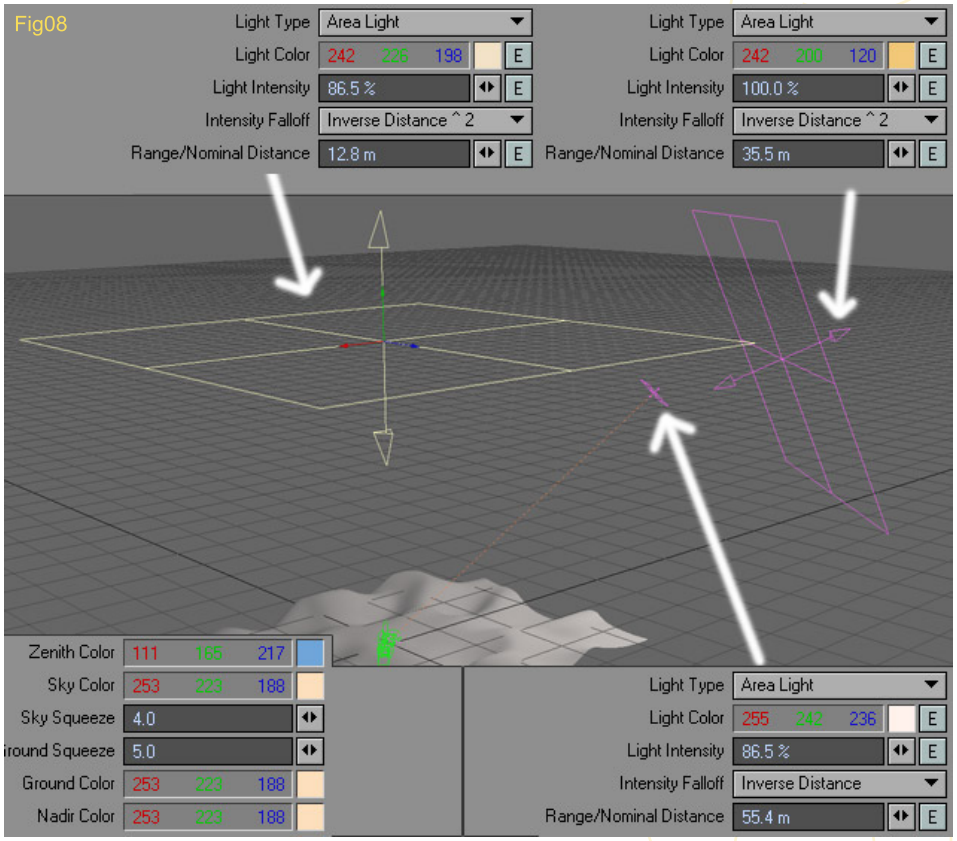
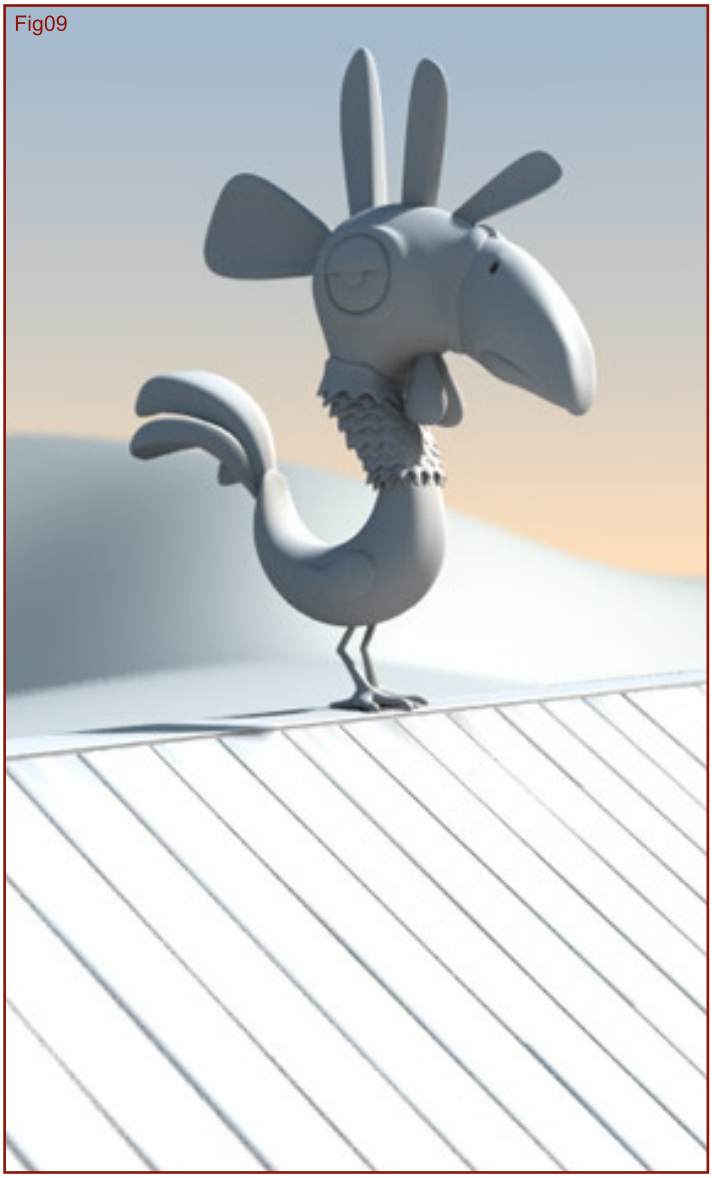
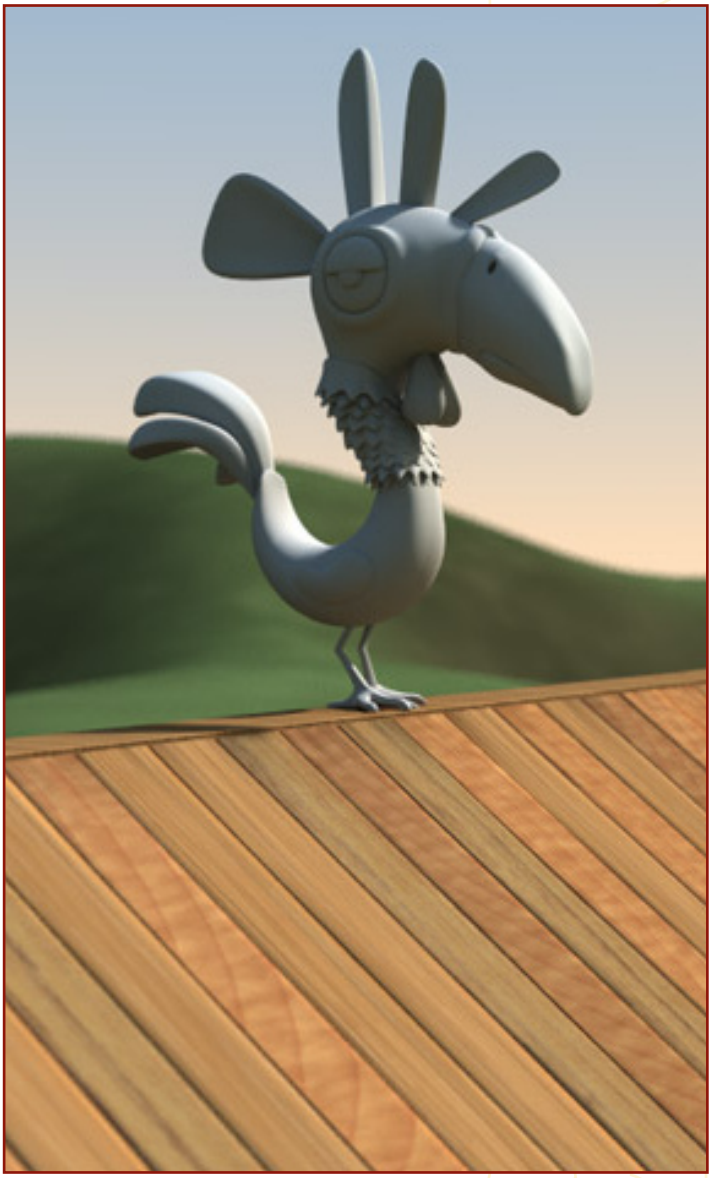


Fig08

Fig09

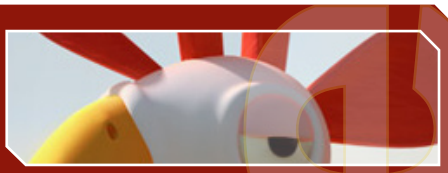




process can be imitated in Lightwave and other 3D applications. I first textured the entire scene with a neutral gray (128, 128, 128 in its RGB channels). Instead of tweaking the camera in Lightwave, I tweaked the lights. I tried to make that gray texture look almost white through my virtual camera. In this case, the wood planks where almost going white since the angle of the wood planks is the same of the area light that is projecting the sun. The trick relies in finding a balance in the “exposure” of all subjects portrayed. On the left image we can see the scene textured with a neutral gray (128,128,128 in RGB channels). The image on the right shows only Rusty textured in neutral gray. It shows how radiosity is working over the gray texture. (Fig09). Once the lighting was done, I added some DOF (Depth of Field) to the camera. It is fairly easy to setup DOF in Lightwave. Once activated under the Camera Properties, a dotted circle appears. This tells us where the image will be sharp and focused. So I made this line “touch” Rusty. I then setup a Lens F-Stop of 8.0. (Fig10). FPrime speeds up the process of tweaking and refining textures and lights. With FPrime we can see changes in real time. We can zoom in and out using FPrime preview window. This allows me to tweak surfaces in detail. We can have at the same time more than 1 rendering window opened. FPrime starts with a grainy render, and as seconds pass by, grain goes away. Fig 11 shows Fprime results after less than 1 minute.

TEXTURING

I used only procedural texturing for this image. For the grass, I applied several layers of procedural textures based on incidence angle, slope, light incidence and colour to produce the grass. This gave the surface a softer look, and richer bounced colours. I also made a procedural wood. It would have been easier to make an UV mapped wood for each plank. I however wanted to practice some procedural



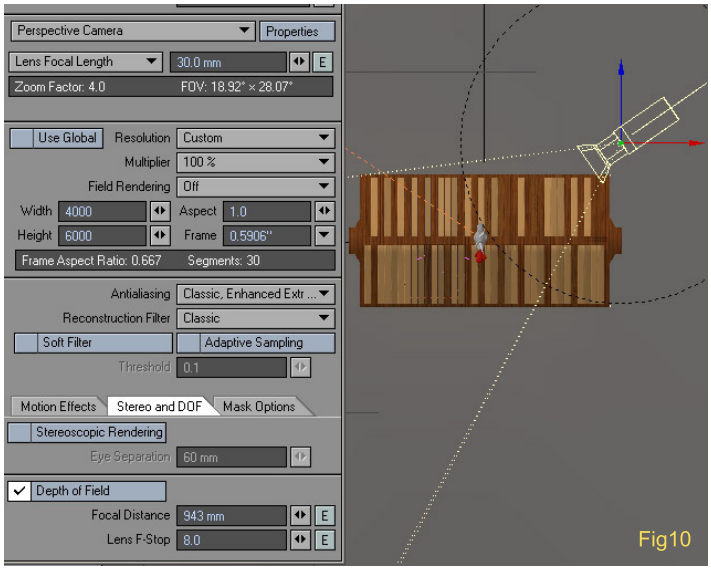


Fig10

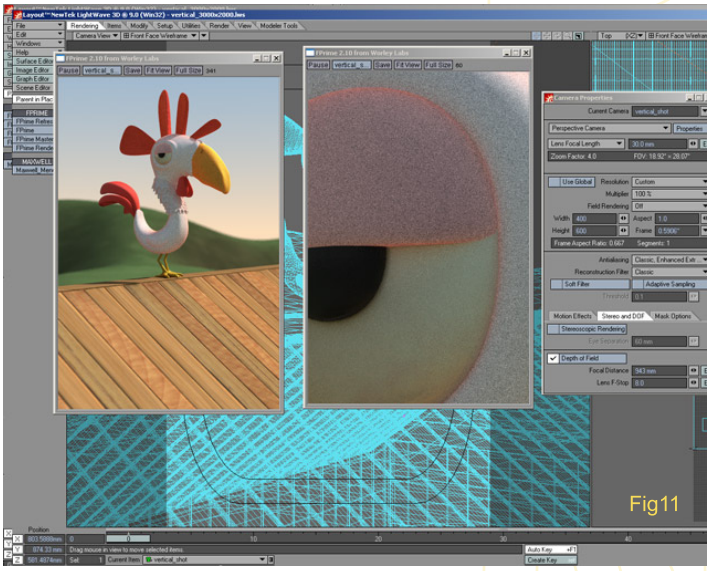
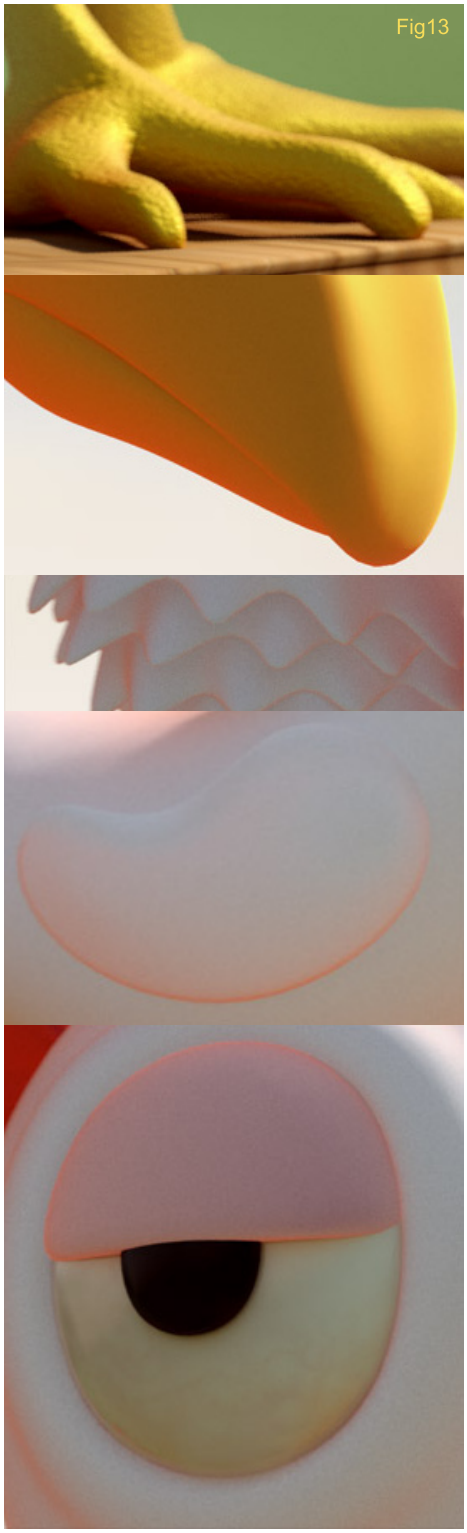

Fig11


Fig12

texturing. I kept a base of the resulting procedural wood texture. Then I made variants to the texture, and applied a different version to each wood plank. This gave the wood a subtle variety, making things less uniform but keeping the attention focused on Rusty. (Fig12). Rusty texture was a bit tricky. There was no SSS applied to rusty. It was all done using colour, diffuse and luminosity changes based on incidence angle to camera and lights. This made the white texture look more interesting to the eye, and gave more volume to Rusty. (Fig13).


Fig13

POST PROCESSING

I always try to keep post-processing to the minimum. If the post-processing can be done for animation, I then do it. This is a healthy habit. When dealing with animation, it is not possible (or time consuming) to correct frame by frame. Learning post-processing that can not be applied to a sequence of images is not healthy. You can however alter things as brightness, contrast, saturation and levels to a whole sequence in programs as After Effects. That is the type of post process I allow myself in programs as Photoshop, since I know it can be migrated easily for animation in programs as After Effects. Good post processing starts with good ordering. It is always a good habit to keep all layers ordered in categories. Here is an image showing different folders that contain the different layers of post-processing. (Fig14). Furthermore, it is important to apply post-processing with “non-destructive” techniques. Generally filters in Photoshop are applied directly to an image. If you decide to go back and correct or tweak a filter, you can’t once you save the file. A non- destructive change is the one that is applied to a layer other than the original image. It keeps the original image intact. By doing changes this way, you can go back and change any post-processing done in a more focused way. It also gives you the ability to change a low-res image with a final high res image on the fly. This allows you to do post-processing using a low res file, while you are still rendering the final high-res image. In the following image we can see that there is a layer

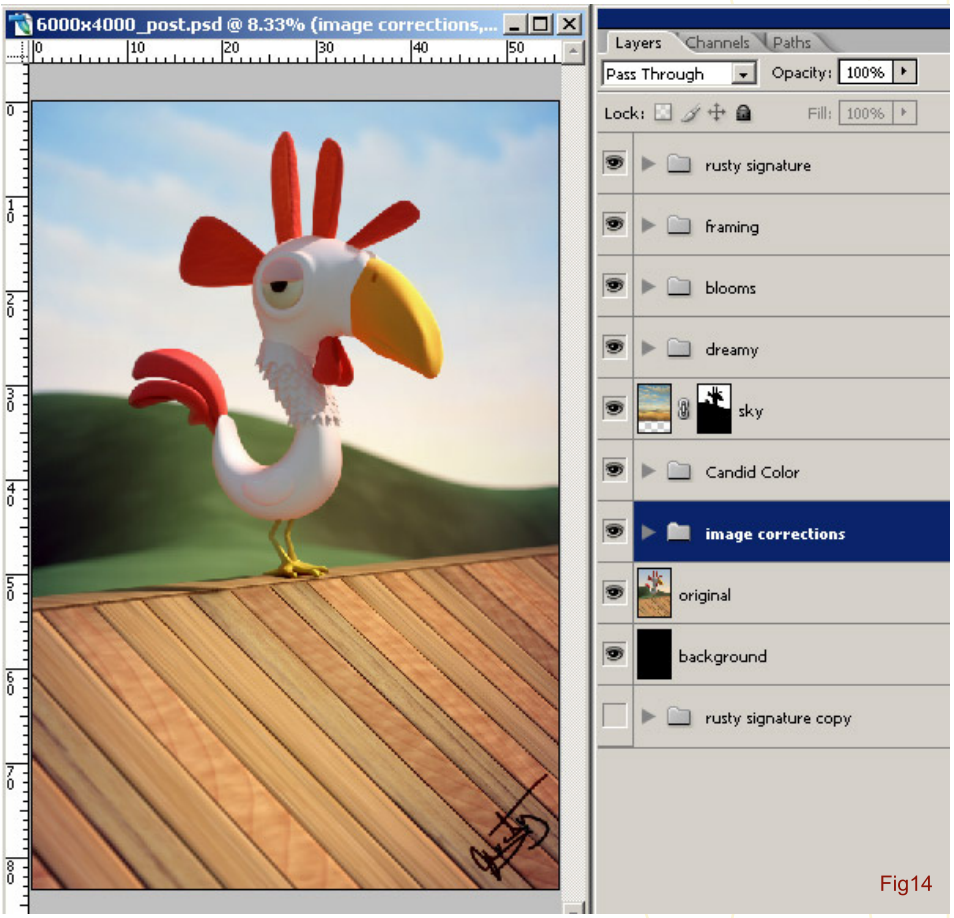


Fig14

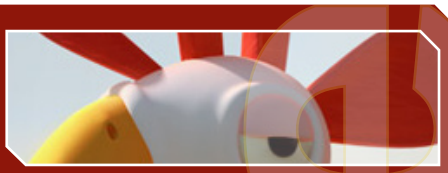




Fig16



of “Colour Balance”. This layer can be tweaked by double clicking it. With this, we can return and change values as we please. Take also note that the original image is kept intact at the bottom of the layers. (Fig15). Post processing should save time. In this case, I decided to use it to alter values in brightness and contrast, as well as some variation in saturation. Doing it directly in Lightwave would be time consuming. I also used the alpha channel of the image to position some clouds on the backdrop. As a final touch, I added a signature reading “Rusty”. In the following image you can see the difference of the original and post processed image. The image on the left is the original render. The image on the right has been adapted with Photoshop filters. (Fig16).

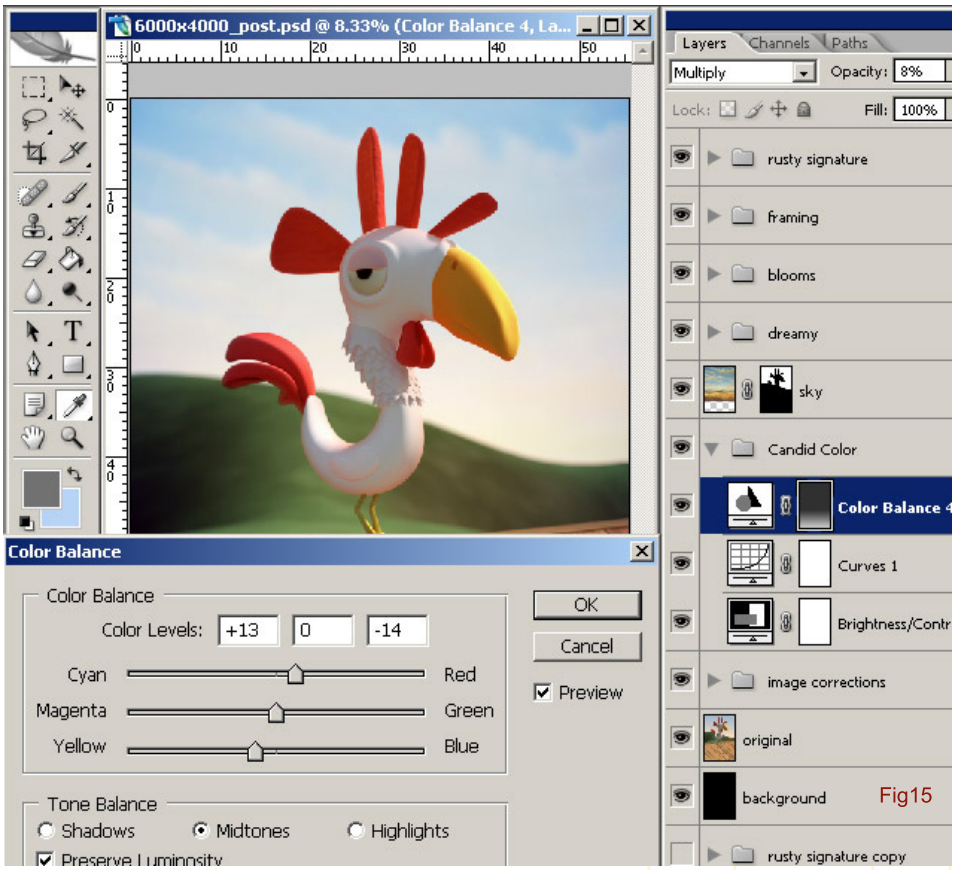


Fig15



FINAL IMAGE

This is the final image! I hope you liked the explanation of how I made it, as well as the final result!

CESAR ALEJANDRO MONTERO OROZCO

For more work from this artist please visit http://www.archeidos.com or contact montero@archeidos.com

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>> My name is XuFei, and I'm a 3D Model and Texture artist based in China. Last year I successfully featured a "making of Zhou Zhang'' on 3DTotal.com. Since then I have received emails asking if I have any new pieces. Fortunately, I have just finished my latest work ''Flower'' and I am pleased to show you a step by step 'making of'. In this 'making of' I am going to explain the methods I used to create this image. I hope you will find it useful and if you have any questions or suggestion don't hesitate to contact me >>



Inspiration

The image is inspired from life, which is full of beauty of construction. Before I started, I collected reference photos from the internet for shading. These references were important to get a realistic image (Fig 01). I prefer a basic modeling style which makes models uniform and compact and puts emphasis on the contrast of the lighting, colour and materials. The little bee and snail on the leaf are depicted carefully to increase the activity and histrionics of my work. Especially, the flying dancing bee symbolizes the freedom everyone pursues. Patience is the most important part of creating photo-realistic work and don't neglect the details in the models and textures which is the reason why we end up with a nice touching piece. I have created this image using 2 programs. All the modeling , lighting, rendering work was done in Maya and all the textures and background were painted in Photoshop.

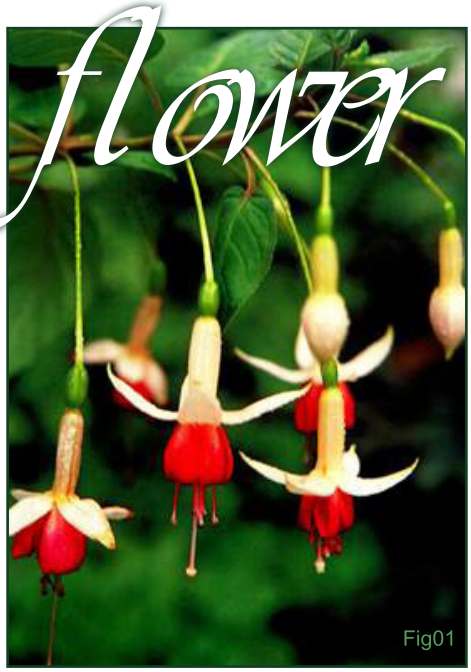
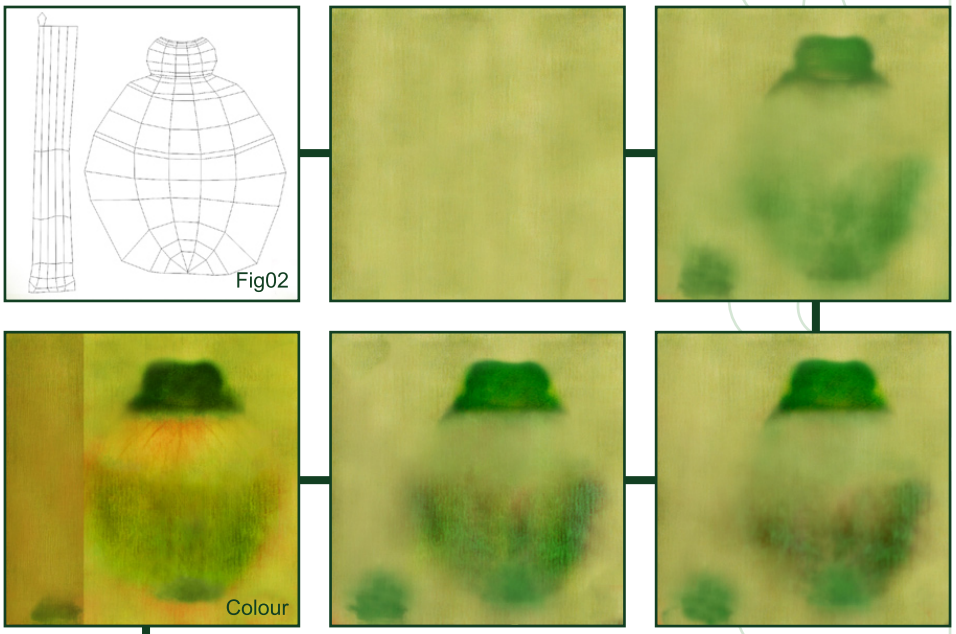


Fig01



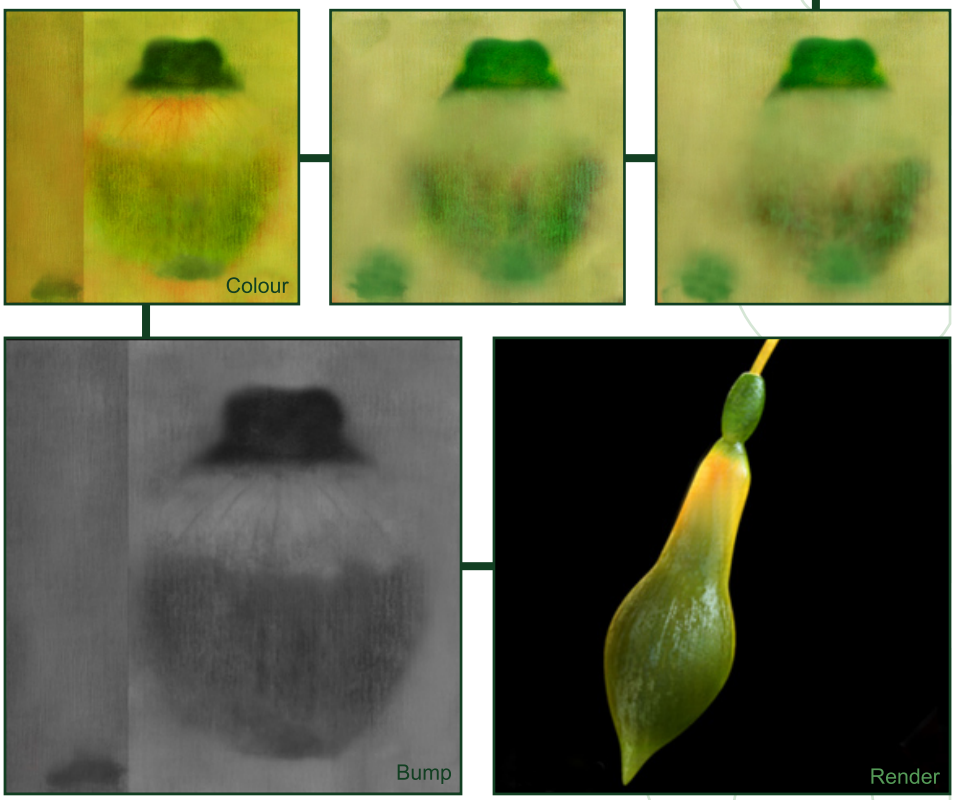
Research Process

It's necessary to know the characteristics of the flower, fruit, leaves and bees, lights can pass through these objects when they are in front. This allows to see into the inside faintly. We should therefore adjust their texture according to these characteristics.


Fig02

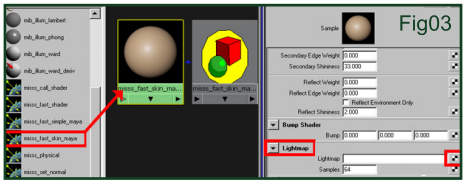
Modelling and Texturing

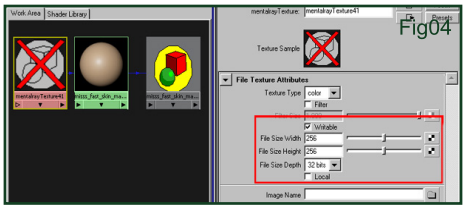
Modelling is simple as I have used polygons for the whole image. I most often use polygons, but sometimes I have been known to use NURBS as well. It's better to make a rough model first, then add the details step by step, It is important to add details as you go along or you will lose the importance of these details when the whole composition starts to take shape. For Texturing, I pay attention to both the entire effect and the details. After I had painted the bottom colour of the fruit, I shifted to the other parts. You can see the textures in Fig02.

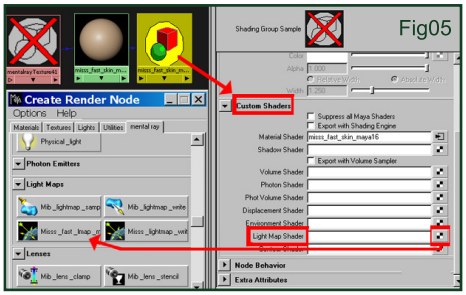


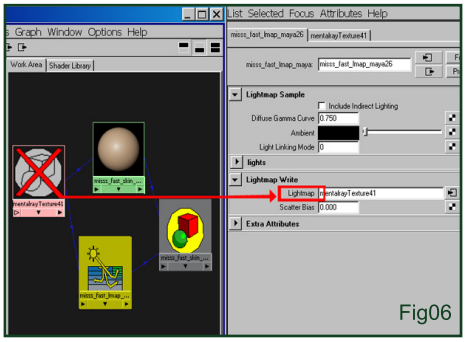
Subsurface Scattering Shader

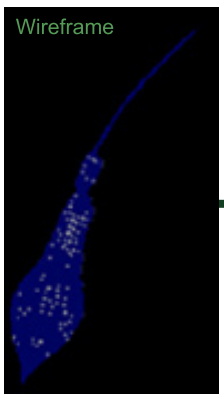
I am going to quickly brush over my Subsurface_Scattering shader. Open up 'Hypershade', under the menu 'create mental ray nodes' create a 'misss_fast_skin_maya' material. Under its attributes, click on 'lightmap', then it will automatically create a Mental Ray texture. After that, turn on 'writable', remember to change the File size depth to 32 (Fig 03 & 04). Then, under the custom shaders find 'light Map Shader', click on the button and then choose the' misss_fast_lamp_maya nodes' (Fig 05). In hypershade find 'misss_fast_ lamp_maya nodes', use your middle click to connect the Mental Ray texture to lightmap attributes of the misss_fast_lamp_maya nodes





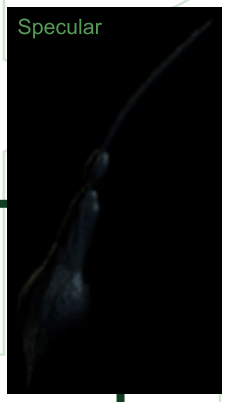


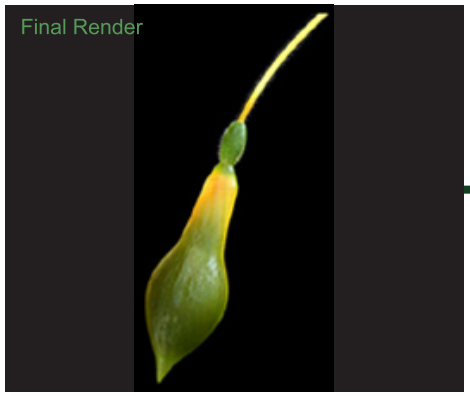


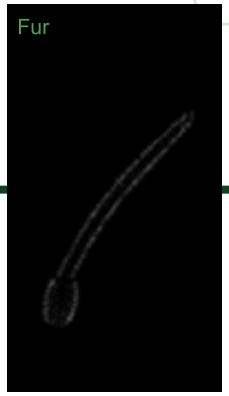


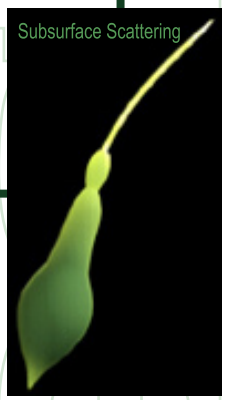




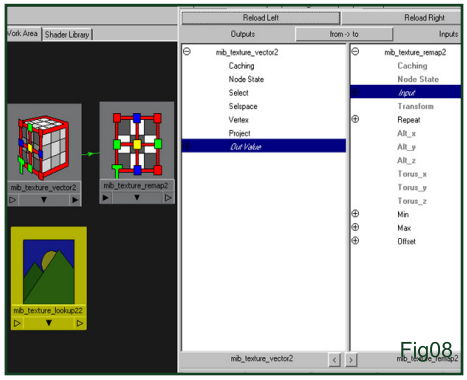


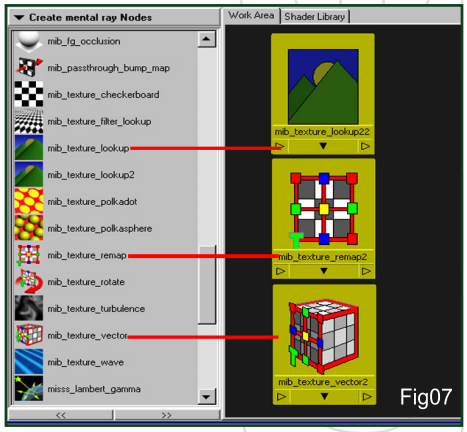


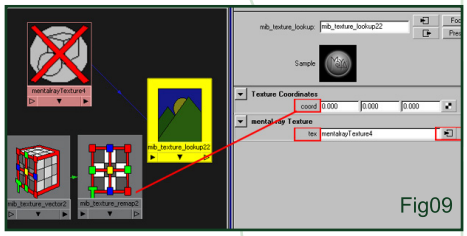


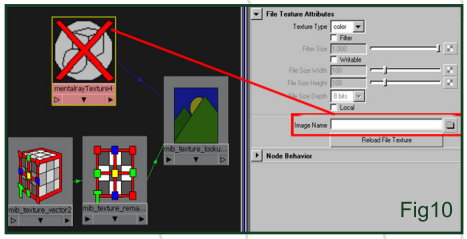


(Fig 06). The next step is to set up a Material given shader of colour and bump. There are three nodes for Colour: 'mib_texture_remap, mib_texture_vector' and 'mib_texture_lookup' (Fig 07). Drag the nodes of 'mib texture remap' to the nodes of 'mib texure vector' by middle click, then connect Out Value and Input (Fig 08) in the connecting form. Click to open the nodes of 'mib_texture_lookup', drag the nodes of 'mib_texture_remap' to the Coord attributes on the nodes of 'mib_texture_lookup' by middle click (Fig 09). Click the left click on the tex property of 'mib_texture_lookup' and the node of 'mentalray texture' would come out



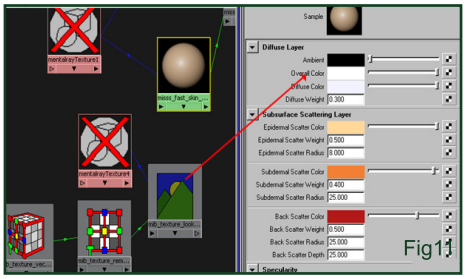


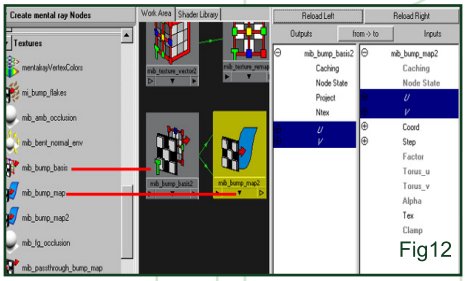


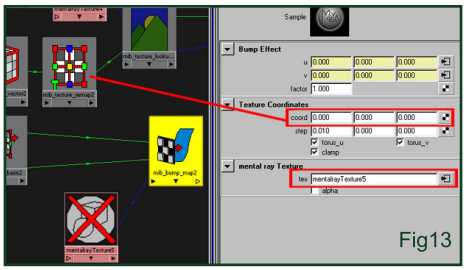




automatically, then put the Colour document onto the Image Name (Fig 10). Open the texture of 'misss_fast_skin_maya' you previously set up, connect 'mib_texture_lookup' to the 'Overall colour' of 'misss_fast_skin_maya' (Fig 11). We have finished the 'colour', then we will connect the nodes of 'bump'. 'mib_bump_basis' and 'mib_bump_map' are all used in 'bump', then drag 'mib_bump_basis' to 'mib_bump_map' by


Fig11


Fig12


Fig13

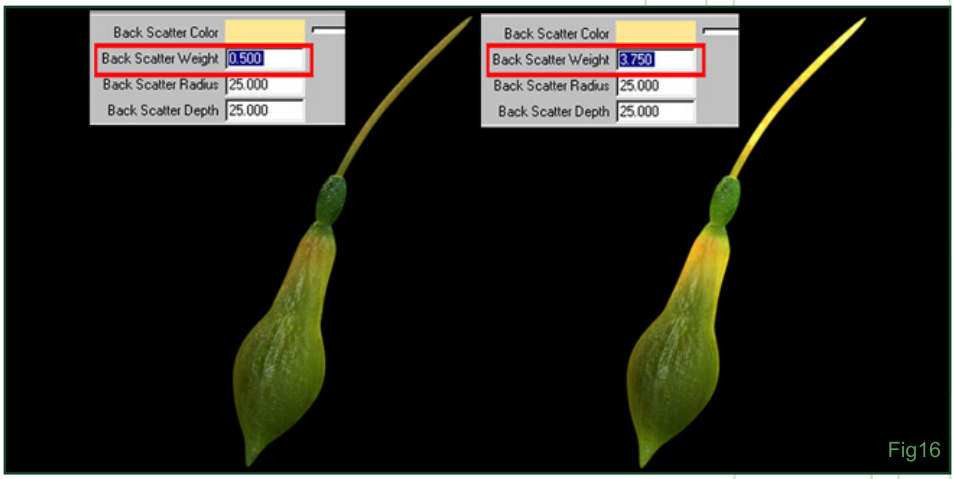
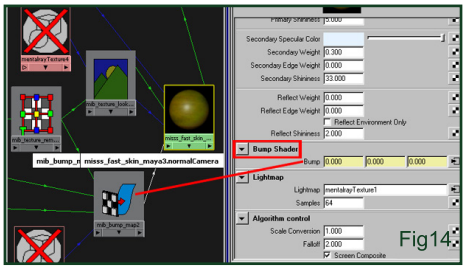


Fig16


Fig14

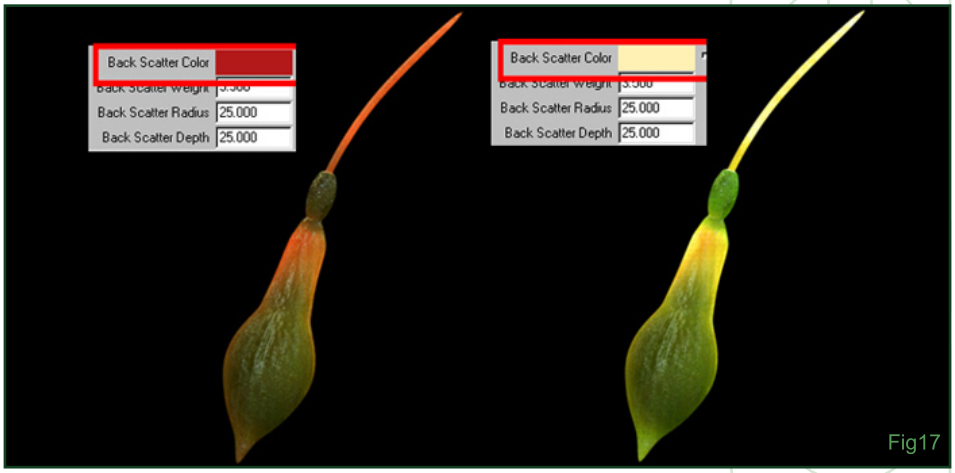


Fig17

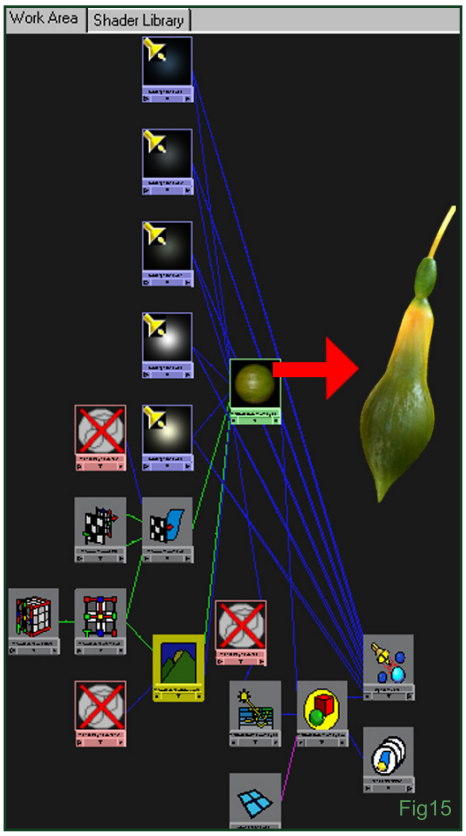


Fig15

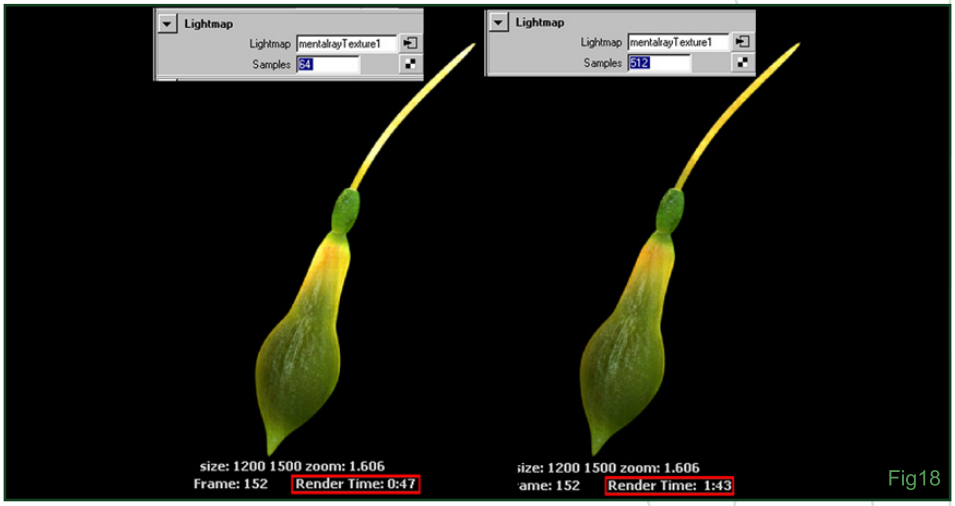
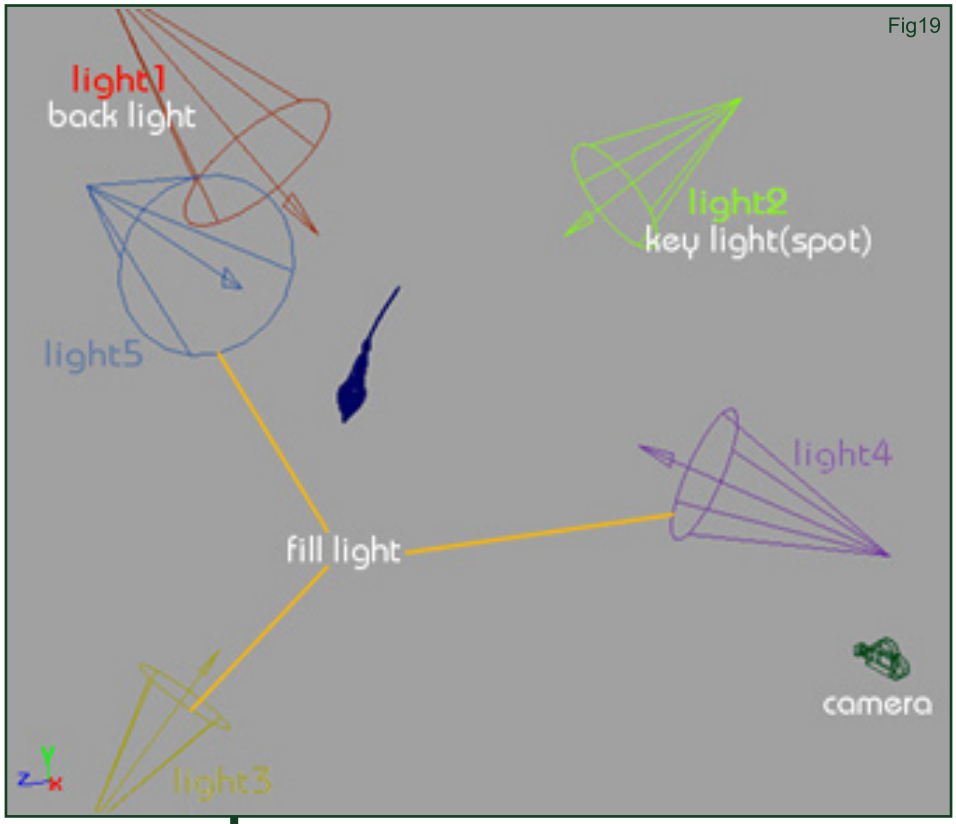


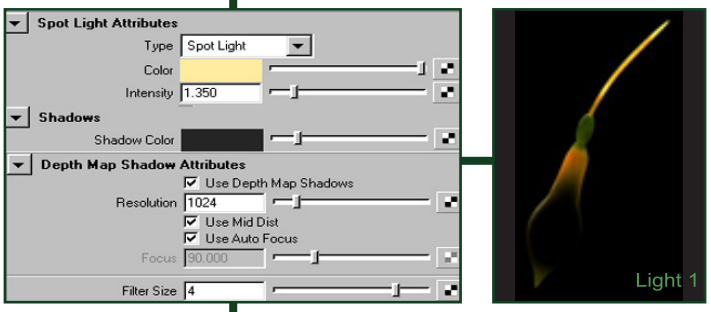
Fig18

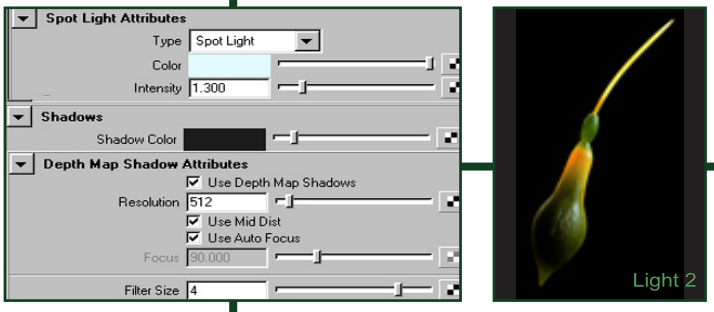


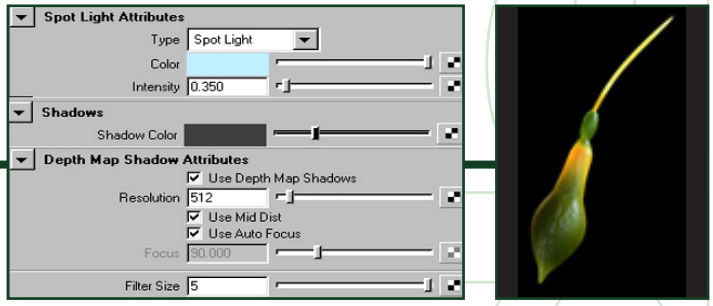
middle click, connect U and V in the connecting form (Fig12). Open 'mib_bump_map', then connect 'mib_texture_remap' to Coord using the mouse. Click the left button on the text of mib_bump_map', 'mentalray texture' will appear automatically. Put Image Name onto bump document (Fig 13). The last step is to open shader of 'misss_fast_skin_maya', connect 'mib_bump_map' to bump attributes (Fig 14). Please consult Fig 15 for the completed nodes. Then I assign the material to the fruit model, the default shading effect is not satisfying and we need adjust some parameters. I'm not satisfied with the translucence which can be improved by adjusting the 'Back Scatter Weight'. The higher 'Back Scatter Weight' we set, the stronger the translucent effects we get (Fig 16). We can also adjust Back Scatter Colour. Because of the rim light, the background colour is the priority (Fig 17). We find some noise in the final image, because the Samples are set too low, the default parameter is 64. I set it to 512 depending on my requirements. It's worthy to mention that if you do a high sample, the render time will be slow. Let's compare the images with different time (Fig 18).

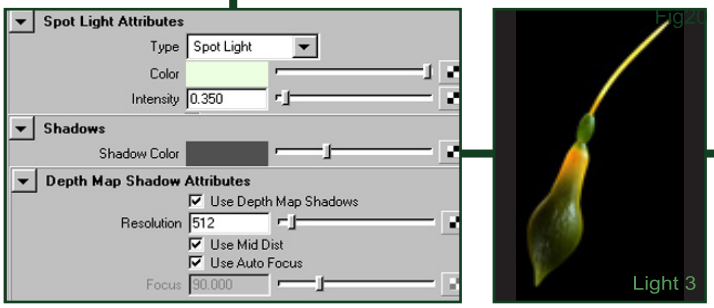
Lighting

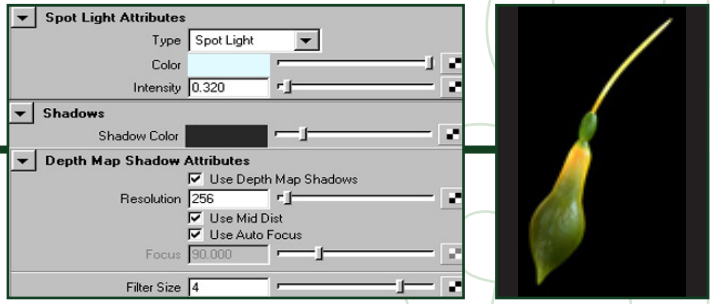
Nothing special here. I just use a spot light as my source (Fig 19). See Fig 20 below for lightning considerations and parameters. If you want more translucent rendering effects, the intensity of back light should be high.













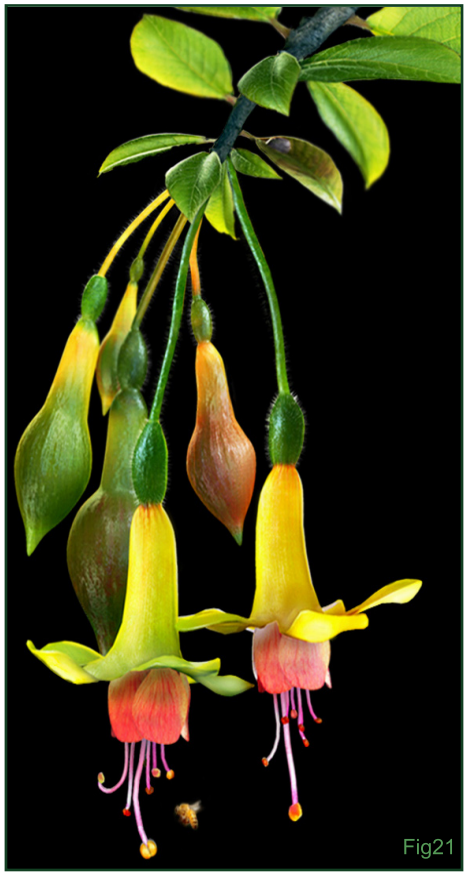


Fig21

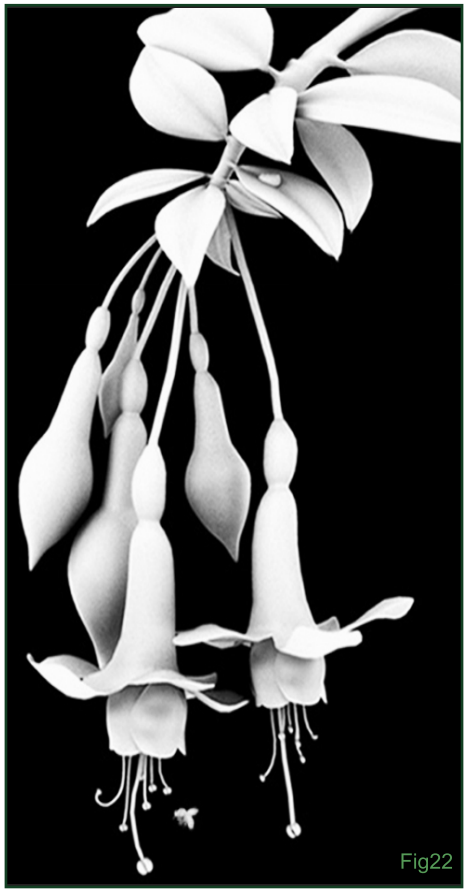


Fig22



Rendering:

This scene was rendered with mental ray for Maya with final Gather (Fig 21 & Fig 22). It will make your objects feel more realistic. The occlusion is shown in Fig 21.

Finishing

At last I added the background. I blurred it in Photoshop, and added some leaves to make the Motion Blur in order to make it to look more vivid.

XuFei

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http://www.sfsdigital.com/

Or contact

xufei8109@126.com

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NOW ON

Wasp

by MATHIAS KOEHLER



This making-of is intended for intermediate users. Beginners are welcome to read this as well of course, but don't expect detailed descriptions of how I've modelled this special head part or that leg or something. There are about 50 pictures showing the process. I'm focusing mainly on the creation of the fly, which is supposed to be the centre of interest in the image.



Umop apisdn

The idea for the image came when was bored of seeing all those interior renderings everywhere. I really like good interior design, but I wanted to take a look at this from a new perspective. I also wanted to show something usual in an unusual way. So, I came up with the idea of showing a common housefly, from close-up, sitting somewhere in a kitchen. The idea developed further into a fly sitting on the ceiling. This allowed me to turn the camera at 180 and therefore showing the fly in a normal position, but the kitchen 'upside-down'. Reference is key! Before starting a project, get as much information about it as possible. Collect images and read about it. (Fig01). The usual front, side and top view put on planes, for reference while modelling. (Fig02).

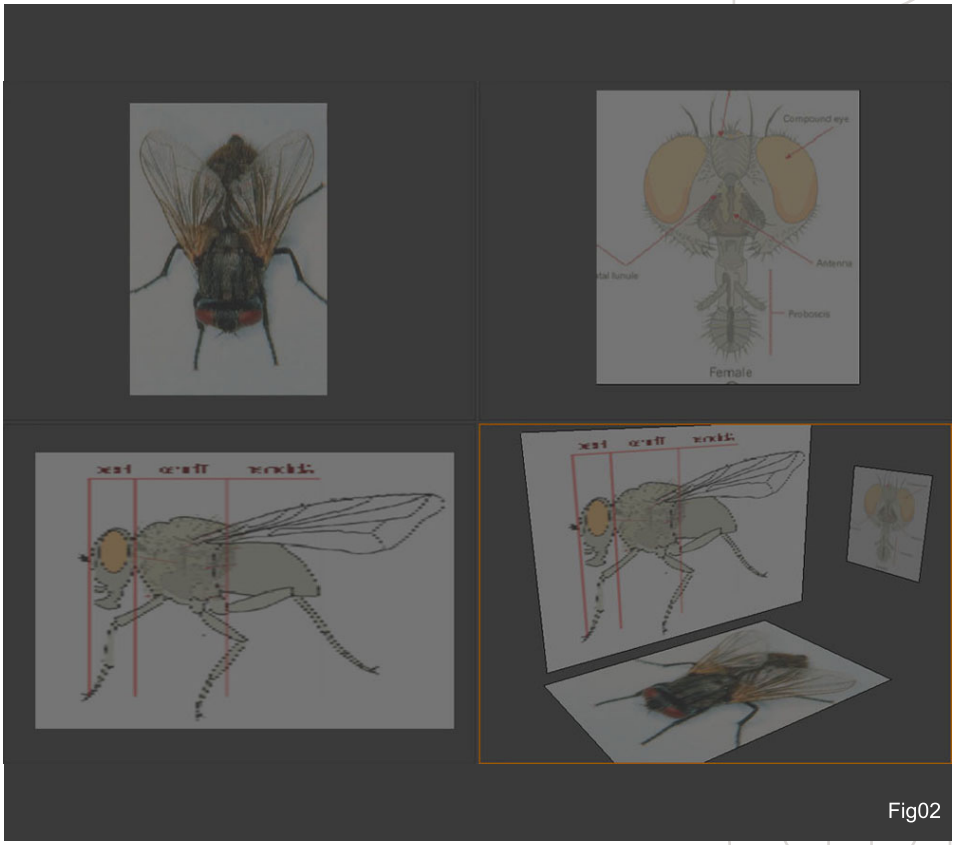


Fig02

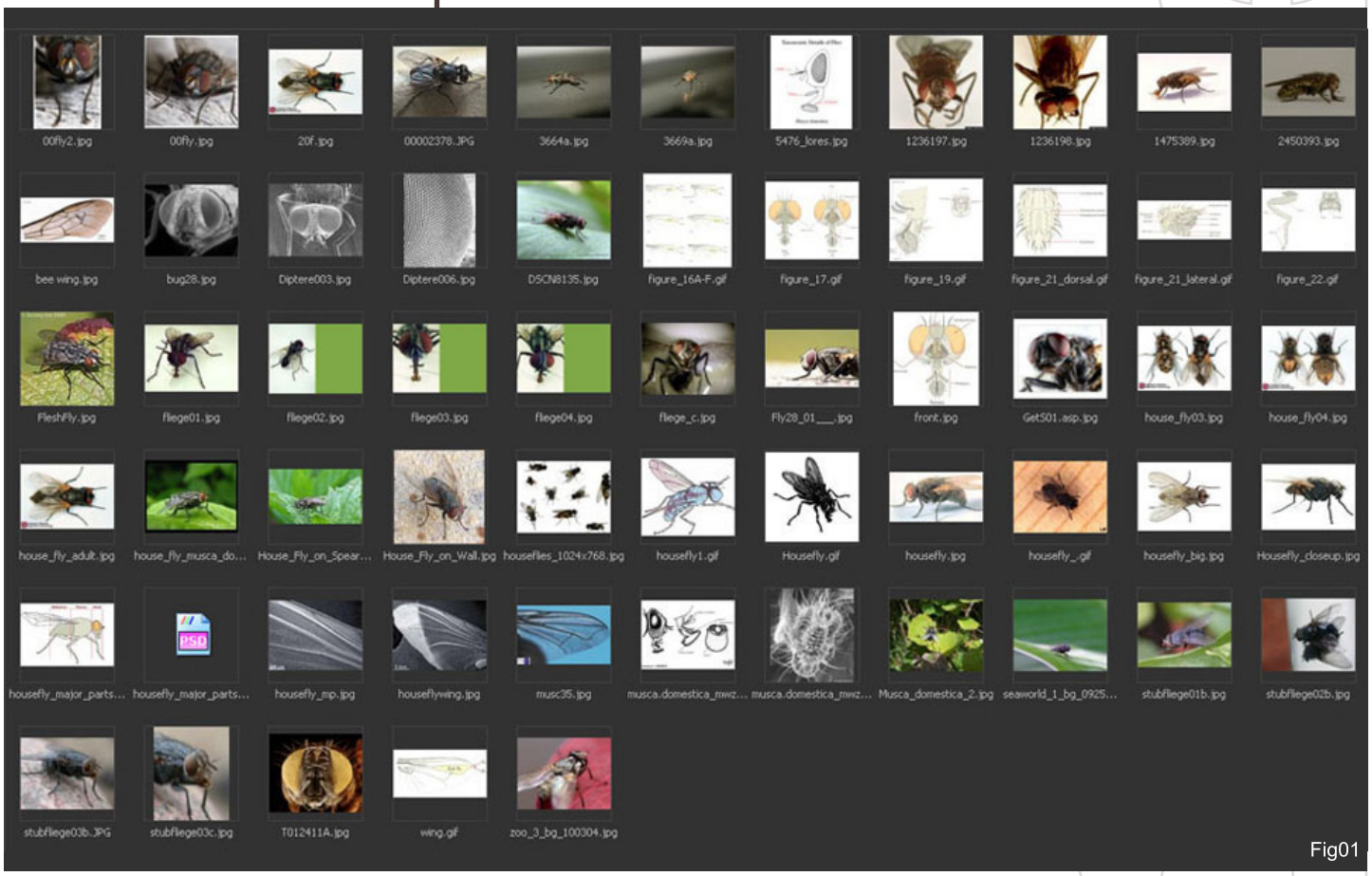
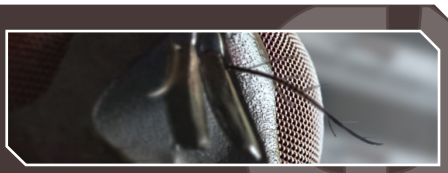
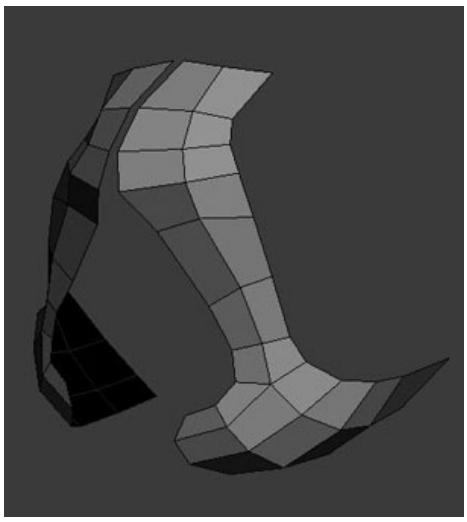
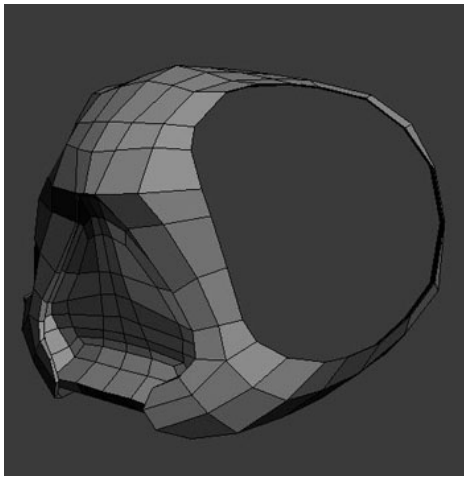


Fig01

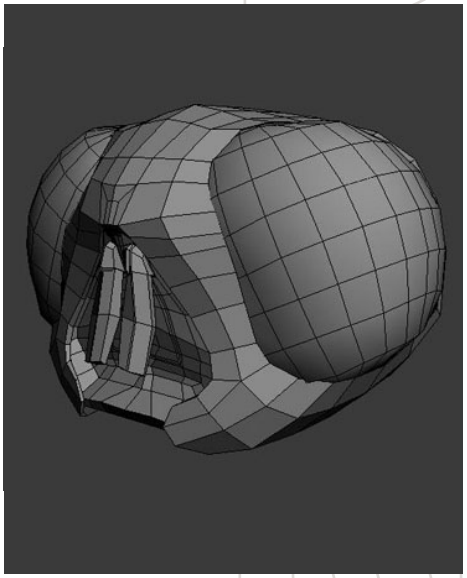


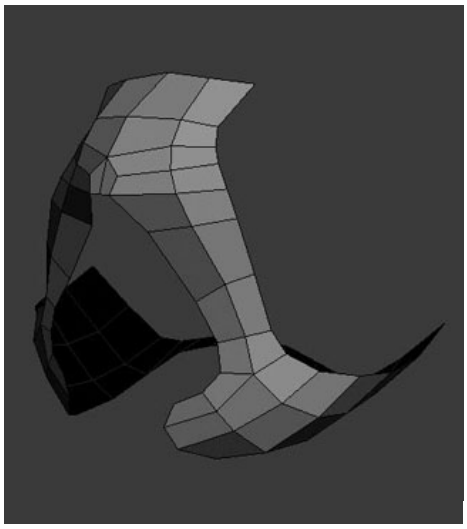
I started modelling on the head. I began with a singe plane and went from there by extruding edges.

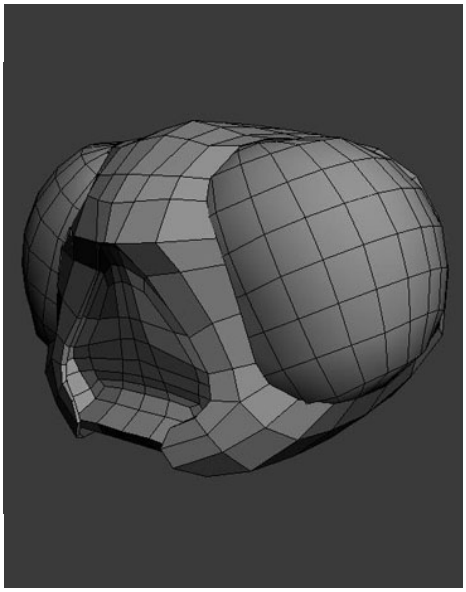


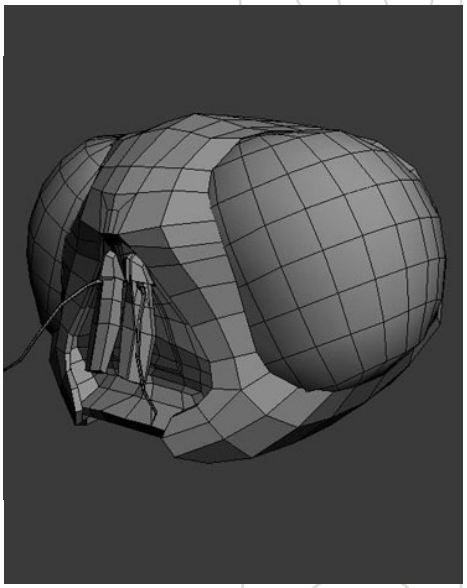


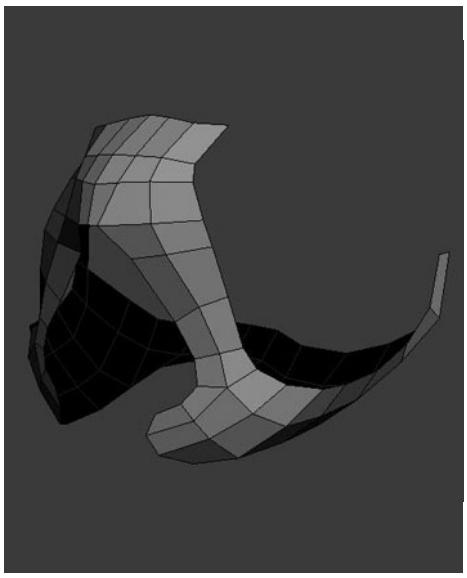
I added the eyes, using a sphere primitive which had to be tweaked slightly.

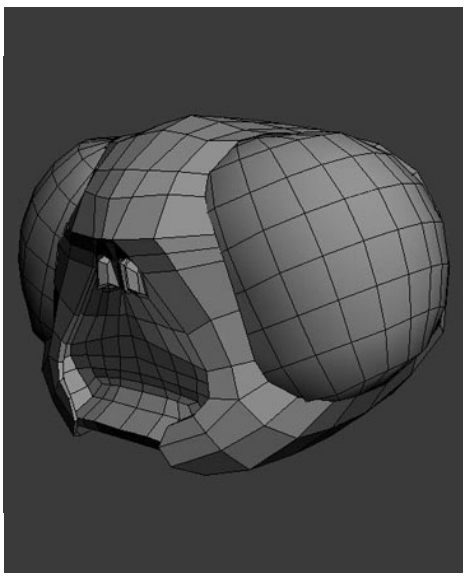


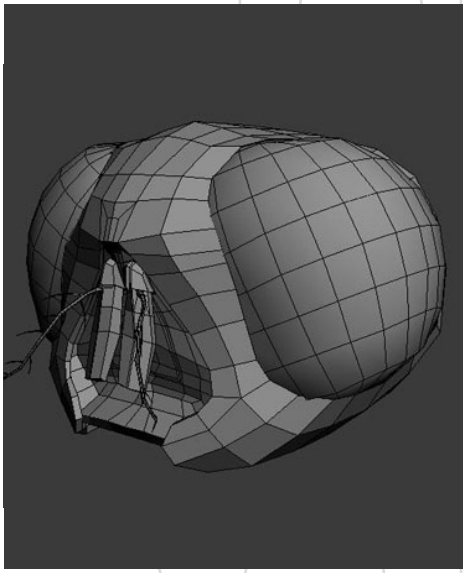


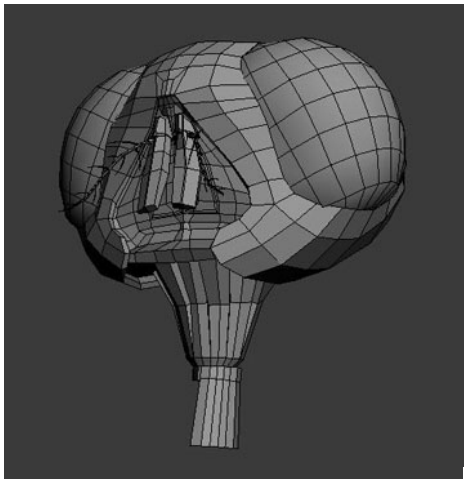




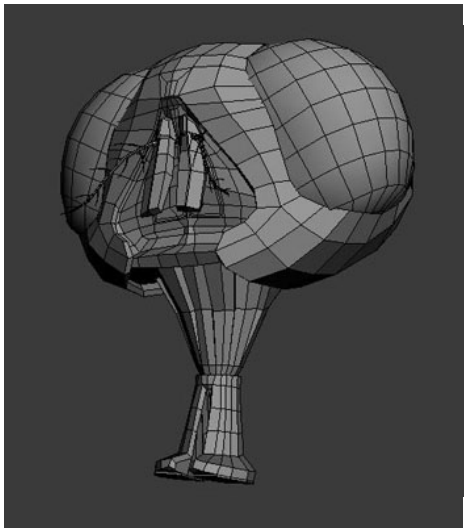


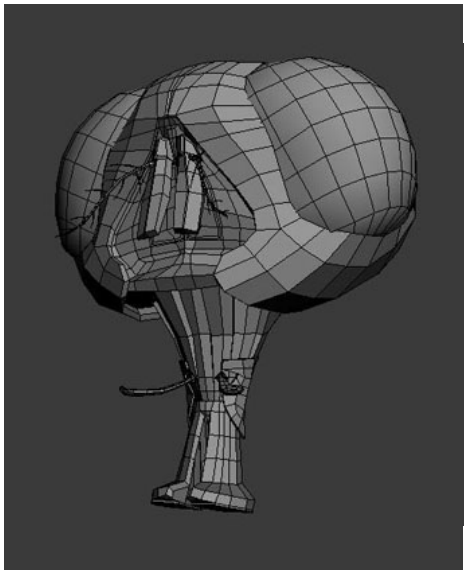




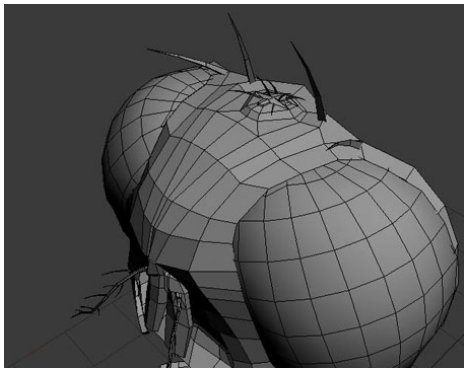


Still extruding edges...

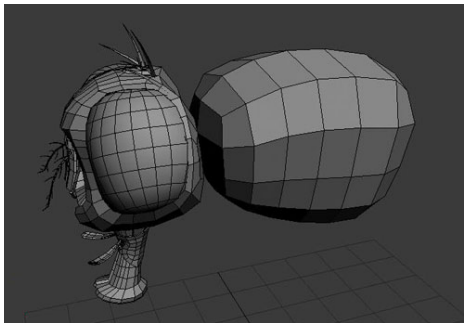




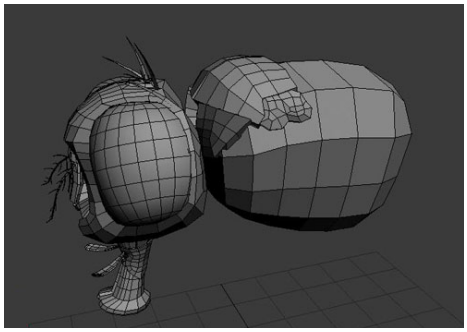
I will create a morph target later, with this 'proboscis' moved in.



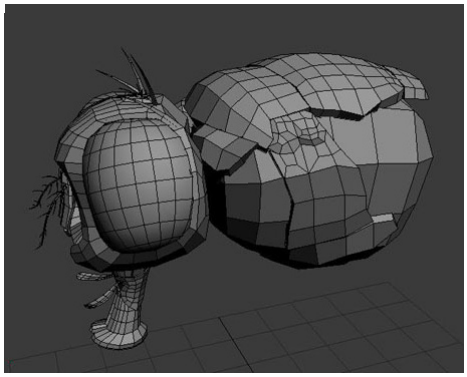
I've used cone primitives for those hairs, which got bent slightly.

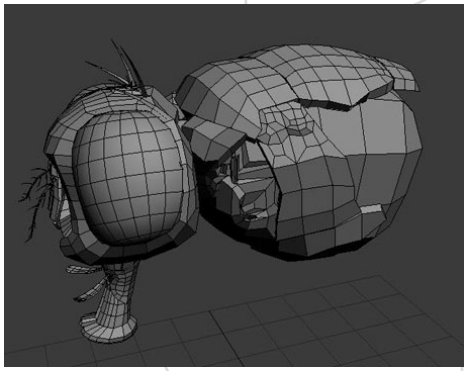


The body started with a box primitive - smoothed with 1 iteration.

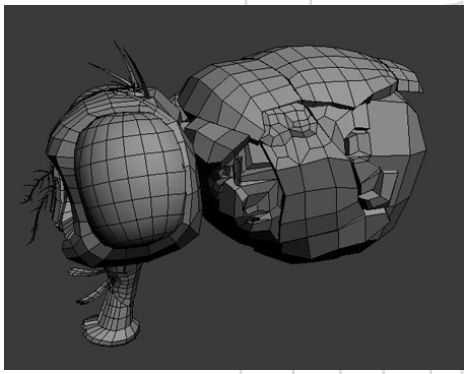


Based on my reference files, I've painted the shapes of the 'armour plates' on the body. Those shapes were then extruded.

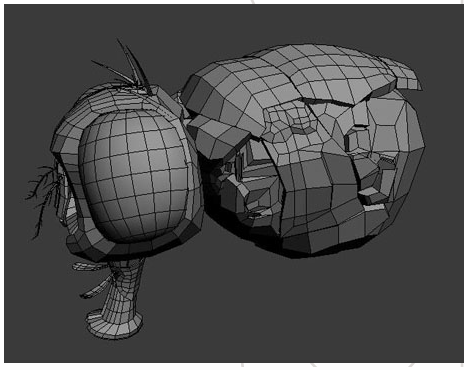




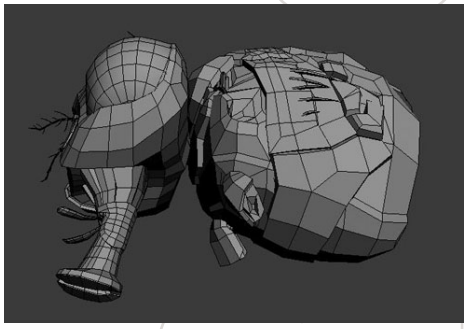
Some further detailing on the body itself.



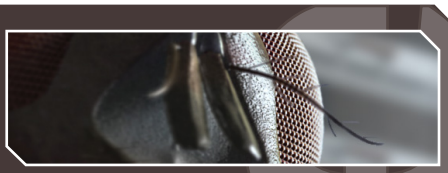
And more armour plates.

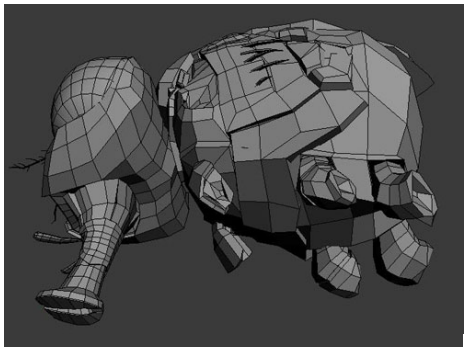


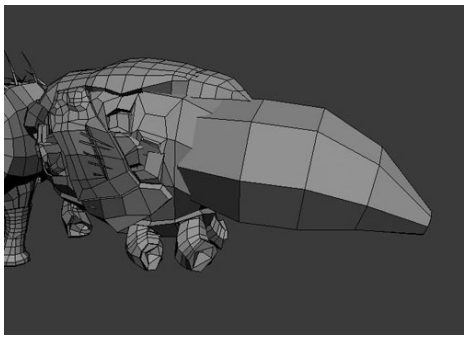
I've added a slit on the side,...



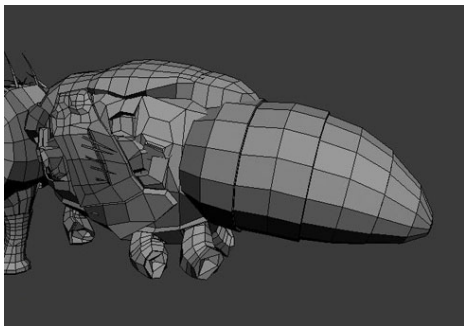
...Put some hairs next to the slit and added the connections to the front legs.



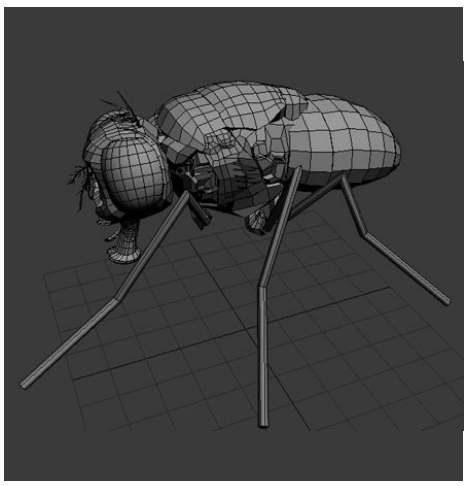




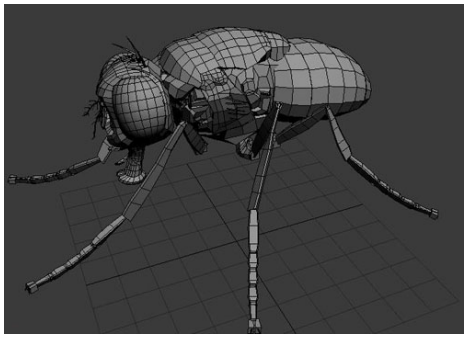
Starting with the back part, again with a box primitive as a starting point.



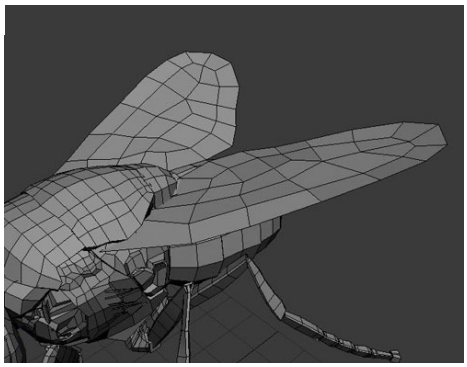
Further refining.



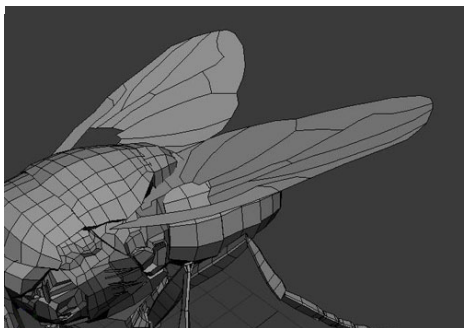
Using (render able) spleens to block in the legs.



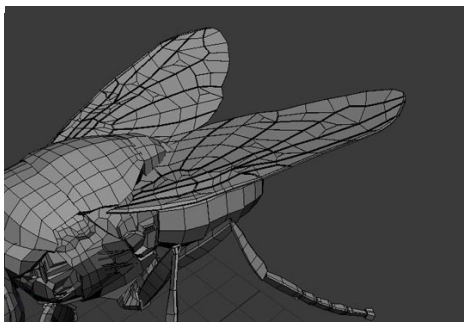
Converting the spleens to poly and shaping them into the desired form.



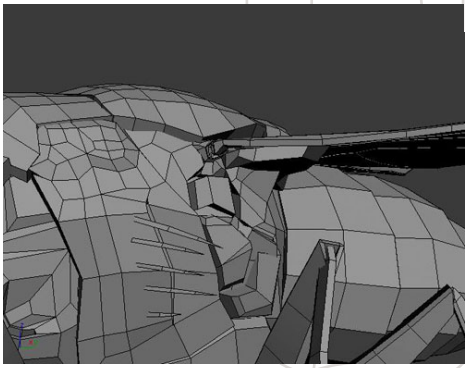
In top view I've created the wings, starting with a single plane and using the edge extrude method.



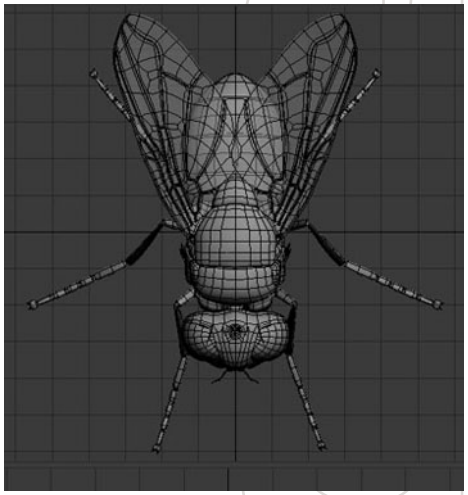
I wanted to model those veins. So I had to change the topology with a lot of cutting + welding.

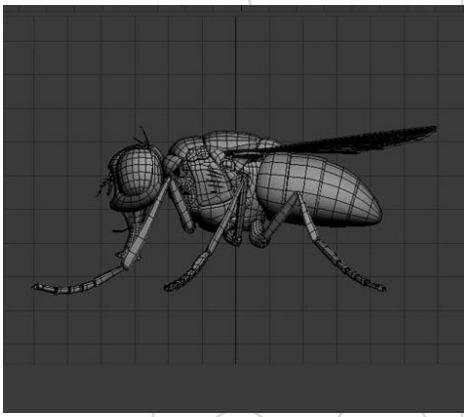


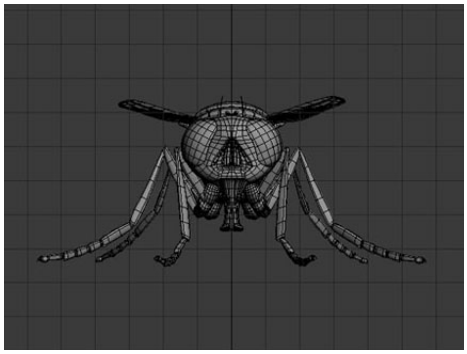
Those edges were chamfered to gain some thickness. To be able to smooth the wing, I had to create many new edges to get a nice topology (quads mostly). The shell modifier was used to give some thickness to the wing itself. The polys between the 'vein-edges' were extruded somewhat to give the veins some height. . This is the body-wing connection. .

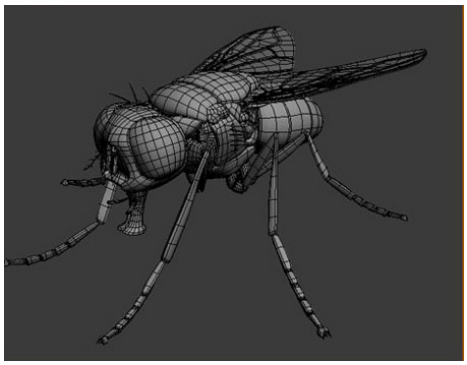


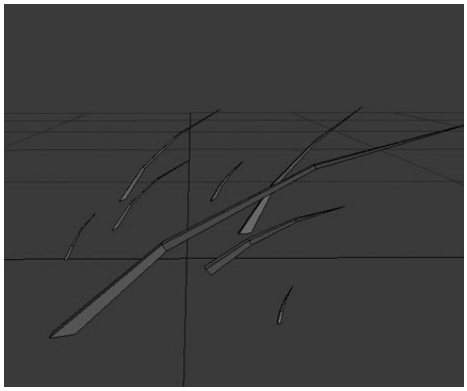
The main modelling is done now. .



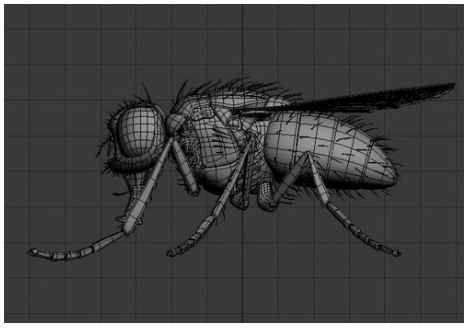




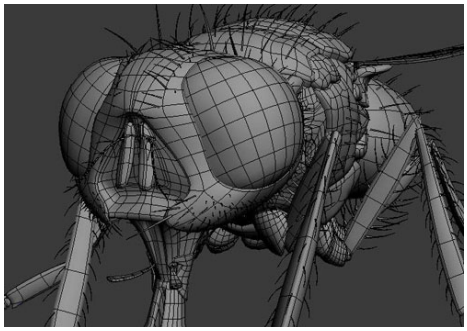




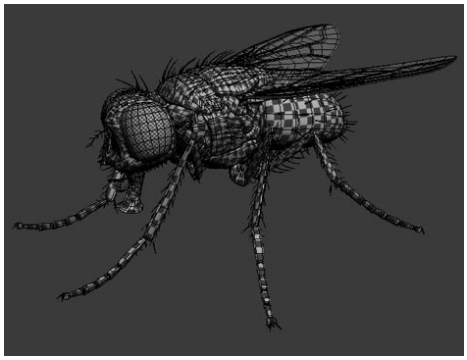
These are some hairs, which I'm going to put everywhere on the body.



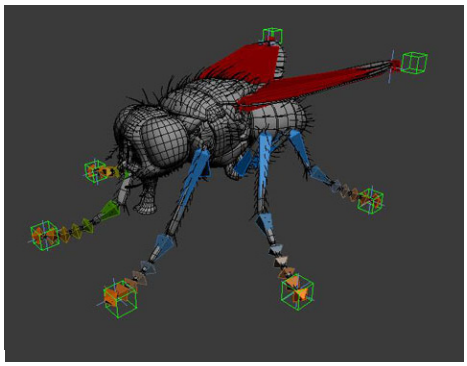
To do this, I've used a script called 'Mouseplanter', written by Roger Hyde. It allows you to paint objects on the surface of others in a very intuitive way.



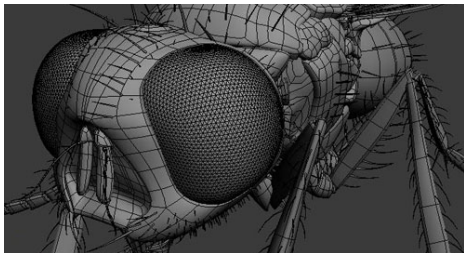
Scary :)



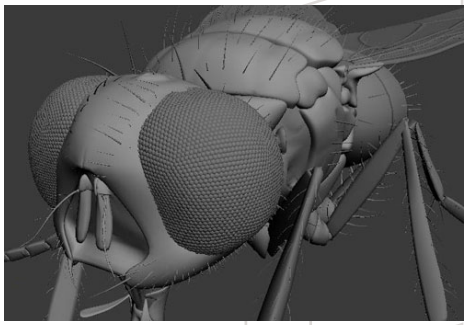
Unwrapping was very straightforward. I've used cylindrical and planar projections as a base and then had to tweak the UV's somewhat.



I decided to rig this guy, to be able to pose him to some degree. The rig is very simple - just some bones and IK solvers. Since there don't



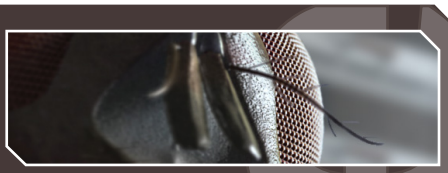
occur any deformations, I could simply link the leg parts and hairs to the bones.
Since the compound eyes are made of many

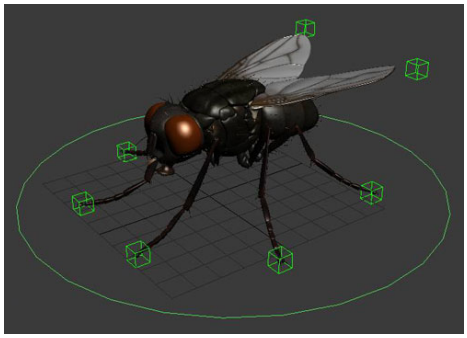


tiny eyes I decided to rebuild them. I've used a geosphere this time. Read below why.
Using the scatter compound object, I could put a tiny sphere on every vertex of the geosphere. The resulting alignment is exactly the same as in nature. The scatter object (including all those tiny spheres) was then baked as a height map to



the geosphere. I could then use the height map, to displace the geosphere.
This is the complete model with all displacement maps assigned. The maps were created in Photoshop and are very simple. They consist of some noise layers, blurred with different degrees, to create bumps with different sizes. I've hand painted a bump on the base of every hair, as well. I'm always creating displacement maps before any other texture maps, because they deform the mesh itself, which feels like I'm still modelling. Displacement maps are also great to use as a guide fore (or even as a part





of) the colour maps.
Colour maps were painted on top of the displacement maps - many dark brown and dark green blobs :)

A render with all maps applied in a simple studio set up. (Fig03).



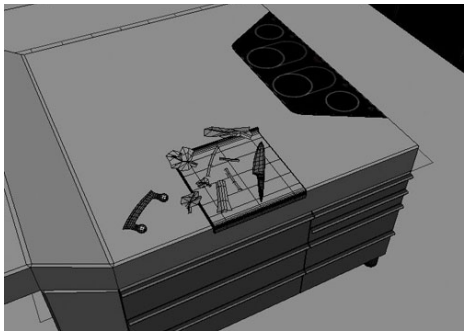
Fig04



Fig03

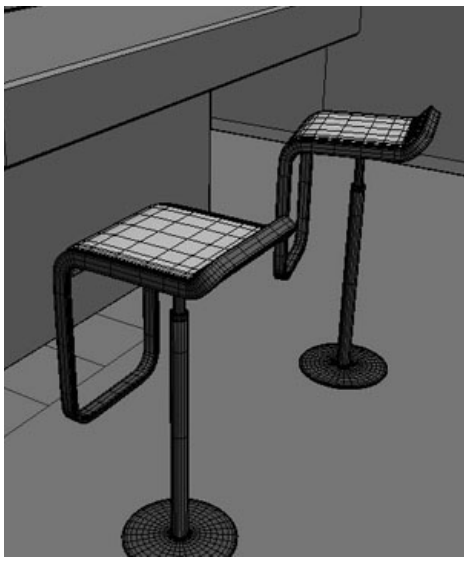
Displacement close-up. (Fig04).

Some viewpoint grabs from the kitchen. Look at

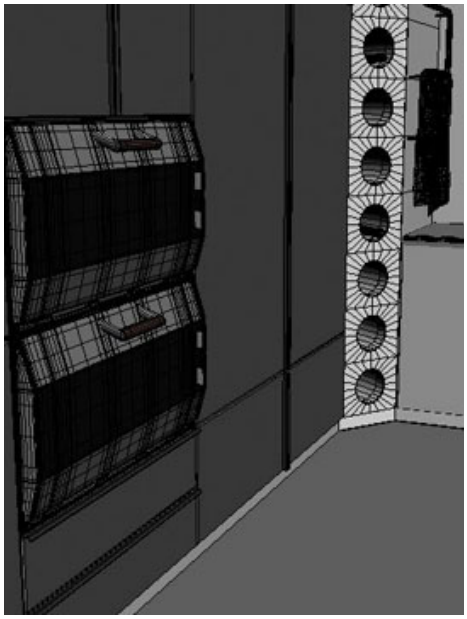


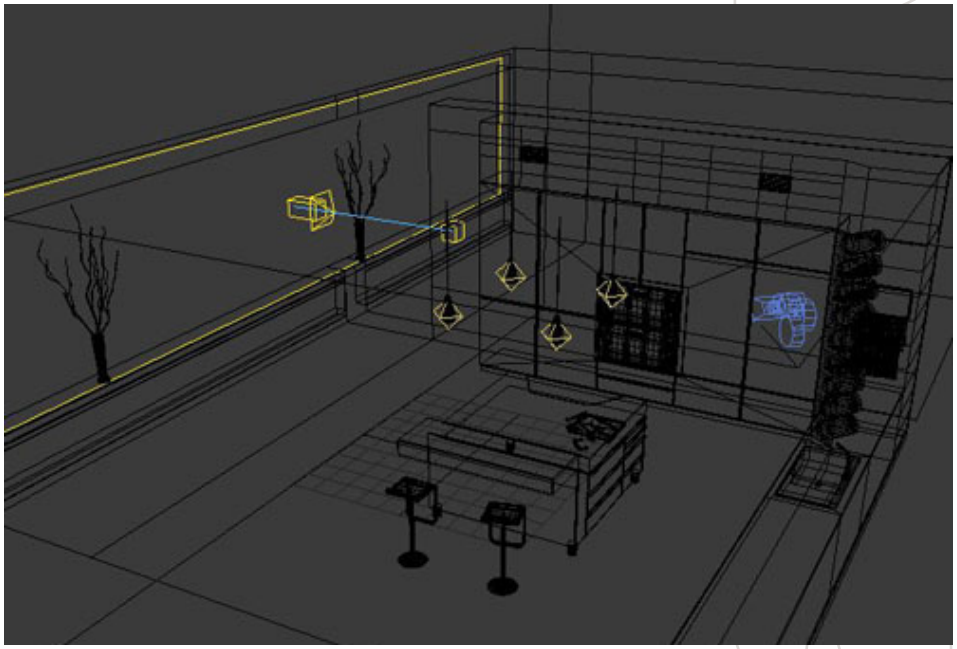
this cool Porsche knife!

I love this stool. Anyone knows, who designed



it? Shoot me a mail!





Gaggenau rocks!

This is the light setup. A large area light, right in front of the windows and 4 omni's. Notice the camera at the right.

The scene seen through the camera. (Fig05).

Kitchen render. I didn't have to use super-high sample values, because everything is going to

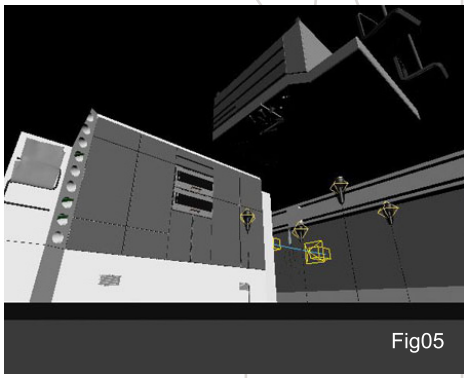
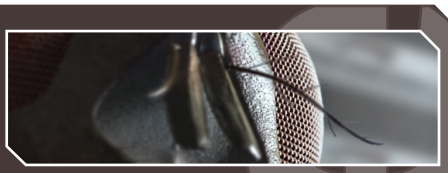


Fig05



Fig06



be blurred. (Fig06).
I had to render the fly in a separate pass. The differences in scale made it somehow impossible for Max to render everything together. Everything went unbelievable slow, when I tried it. The fly measures about 1 cm, while the entire room has about 7m. (Fig07).

Both passes combined together. The background is blurred. There is also some DoF on the fly pass. This helps to direct the focus to the flies head. I spend a lot of time finding the right camera position. This is important for a good composition. Since the head should be the focal point, I searched for lines the that can guide the viewers eye to the head. (Fig08)



Fig07



Fig08


Fig10

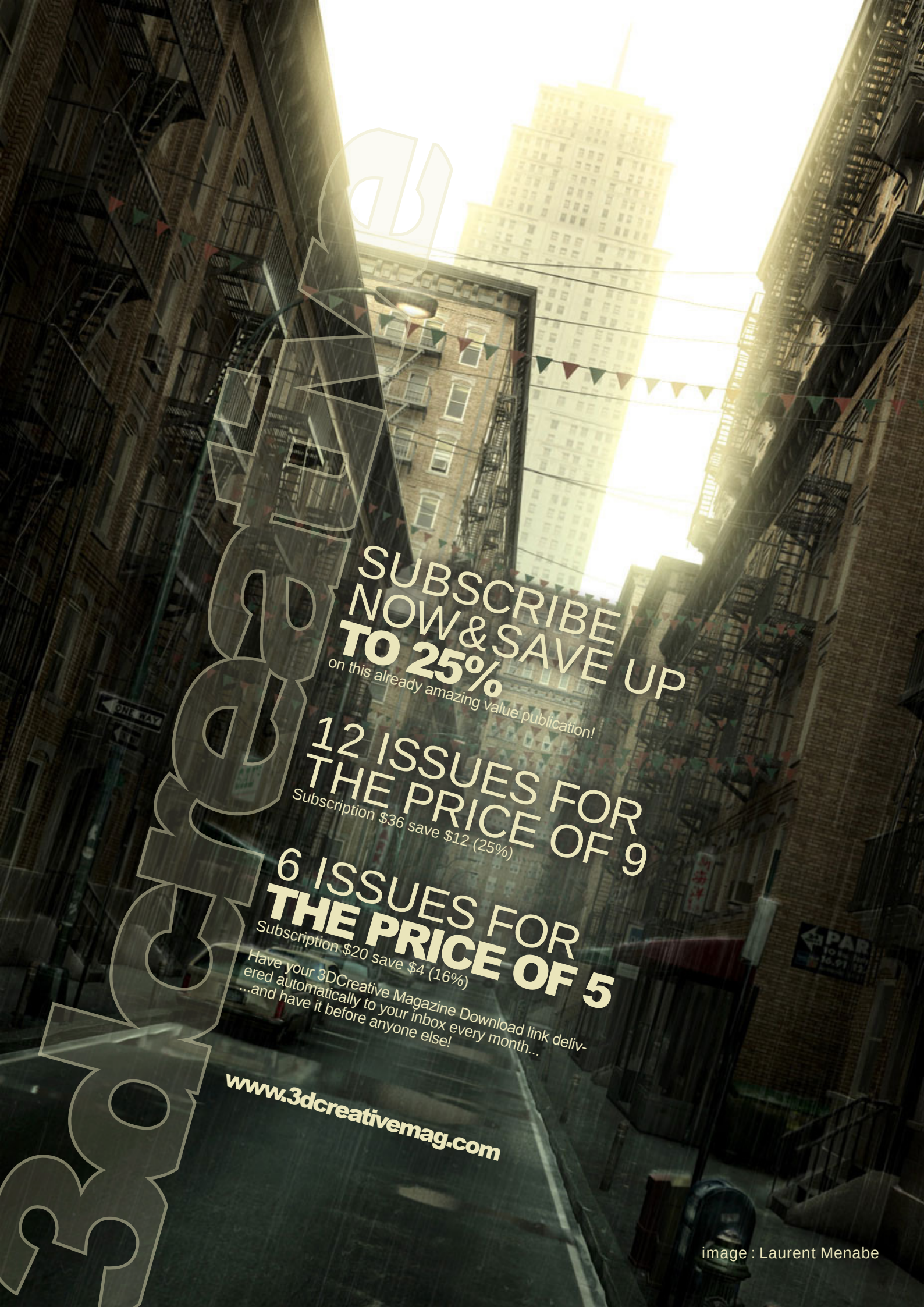
This is the final piece. I've added some lens distortion and decided to mirror the image. It might be just personal preference, but I think it does support the composition even more.
In the western hemisphere, everyone is used to read from left to the right. And I guess this is true for looking at pictures as well. So in this case, the viewers eyes are entering the picture from the left and are guided directly to the flies head. (Fig09).

Head close-up, cropped from the high resolution image I worked with. (Fig10).

I hope you enjoyed this making-of. If you have further questions, don't hesitate to contact me.

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Fig09


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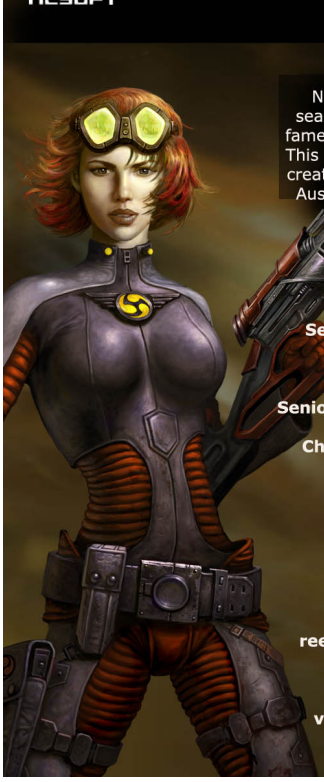
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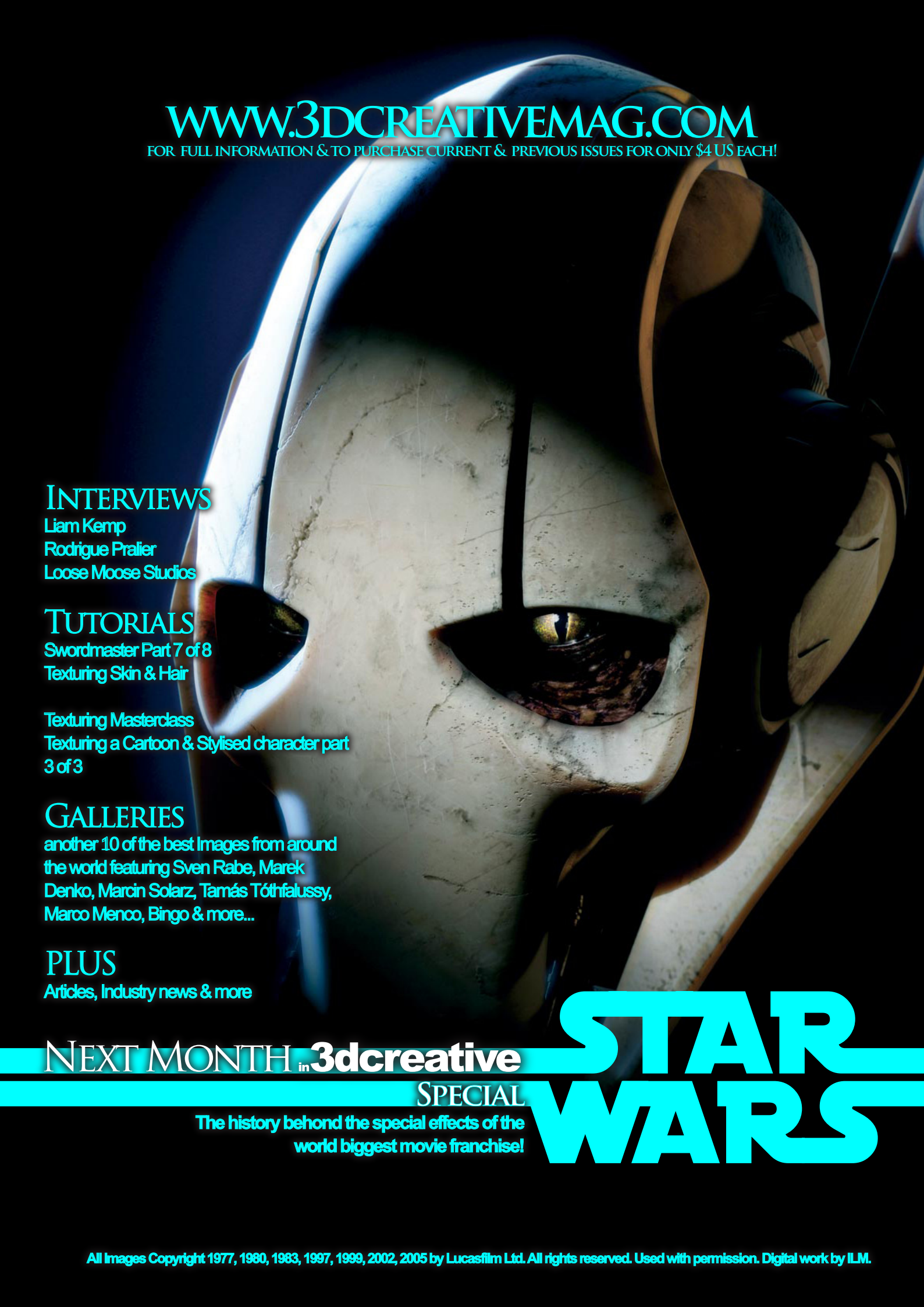
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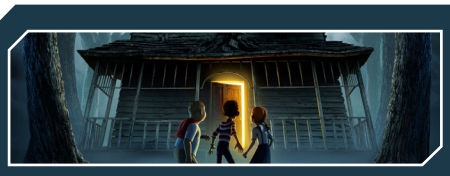
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Issue 009 May 06

Modeling the Head

Issue 010 June 06

Modeling the Torso

Issue 011 July 06

Modeling the Arms & Legs

Issue 012 August 06

Modeling the Clothing & Hair

Issue 013 September 06

Modeling the Armour

Issue 014 October 06

Mapping & Unwrapping

Issue 015 November 06

Texturing the Skin & Body

Issue 016 December 06

Texturing the Armour & Clothing

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Part 6
Mapping and Unwrapping

Introduction

Welcome to the sixth instalment in the series which will provide a look at mapping and unwrapping our finished mesh. This is quite an involved process and will be covered in only one tutorial. In order to keep this from becoming too long I have not detailed every step along the way but rather opted to provide an overview of the principal techniques used. This should hopefully equip any beginners with enough information to tackle the entire model and complete it on their own. The crucial methods necessary will be covered and then can be repeated to map sections that have been omitted. The important thing to remember is that the tutorial has been filtered to contain only the key procedures.

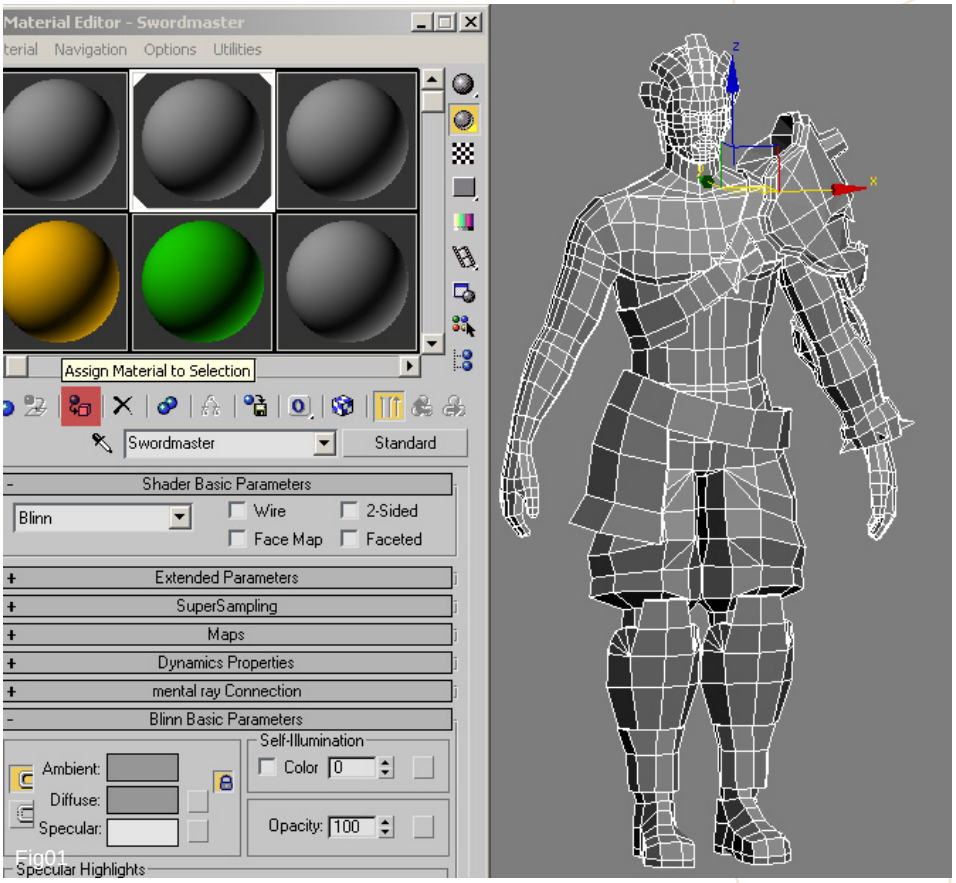


Fig01

1. The first step is to apply a material to our model so open up the material editor and select all the geometry and then click on the Assign Material to Selection button (highlighted in red in Fig01). Notice how the model has now adopted the grey colour of the assigned material (top center) and is now surrounded by four white triangles indicating it belongs to an object in the scene. Get used to naming your materials too – in this case Swordmaster.

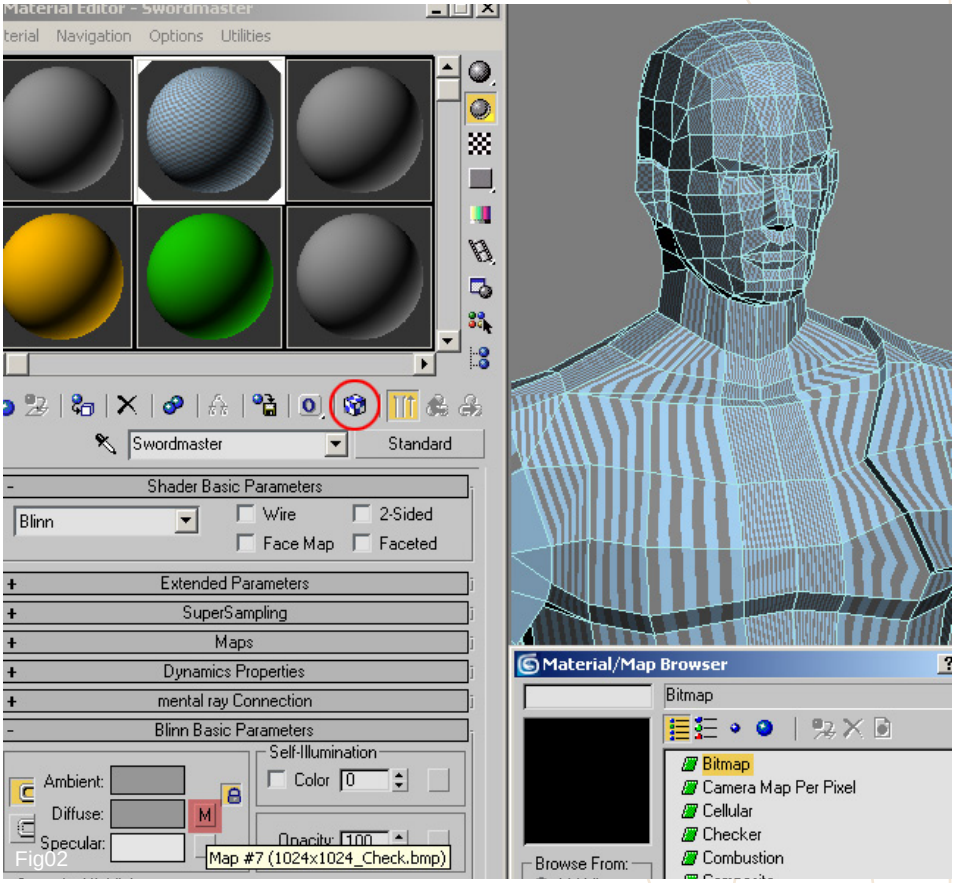
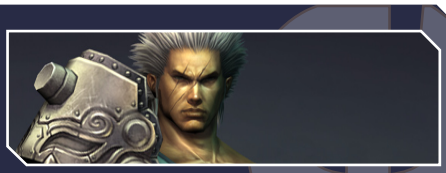


Fig02

2. In order to check the integrity of our mapping co-ordinates and enable us to successfully unwrap our mesh we will need to apply as texture to our geometry to act as a guide – in this case a checker map. The idea here is that the squares are a consistent size and so will easily show any stretching and badly mapped polygons. To load the texture make sure you first of all have a checker map and then click on the small button next to the Diffuse slot (highlighted



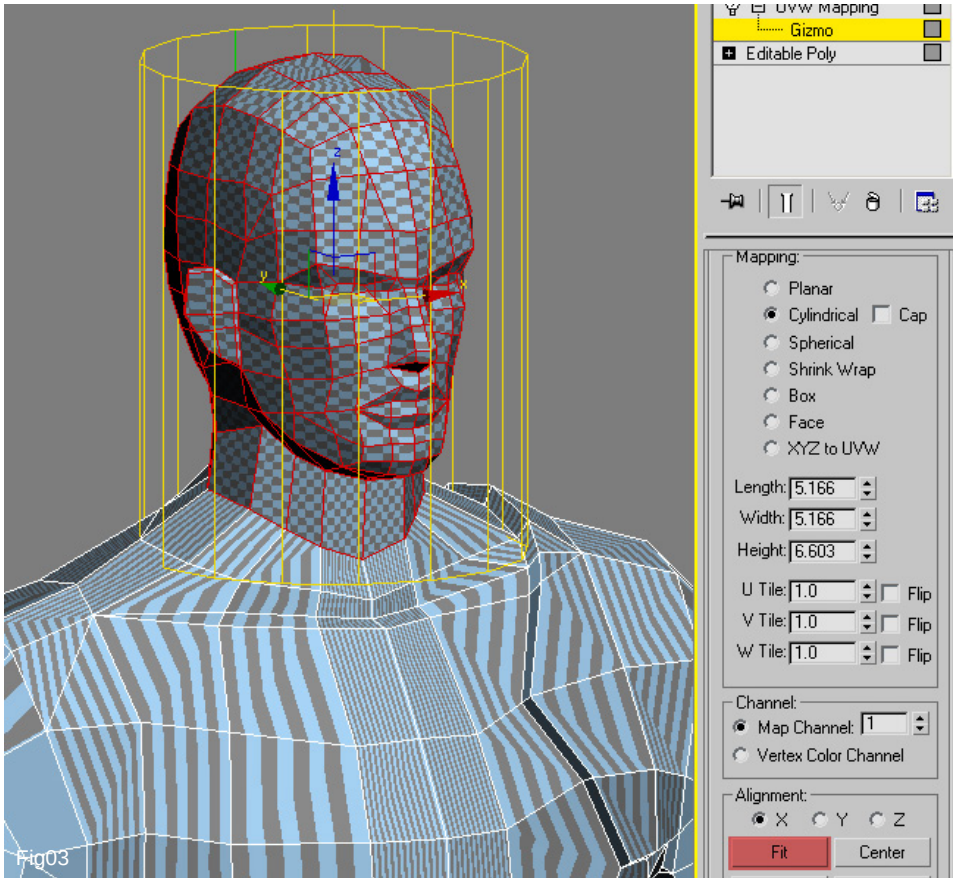


Fig03

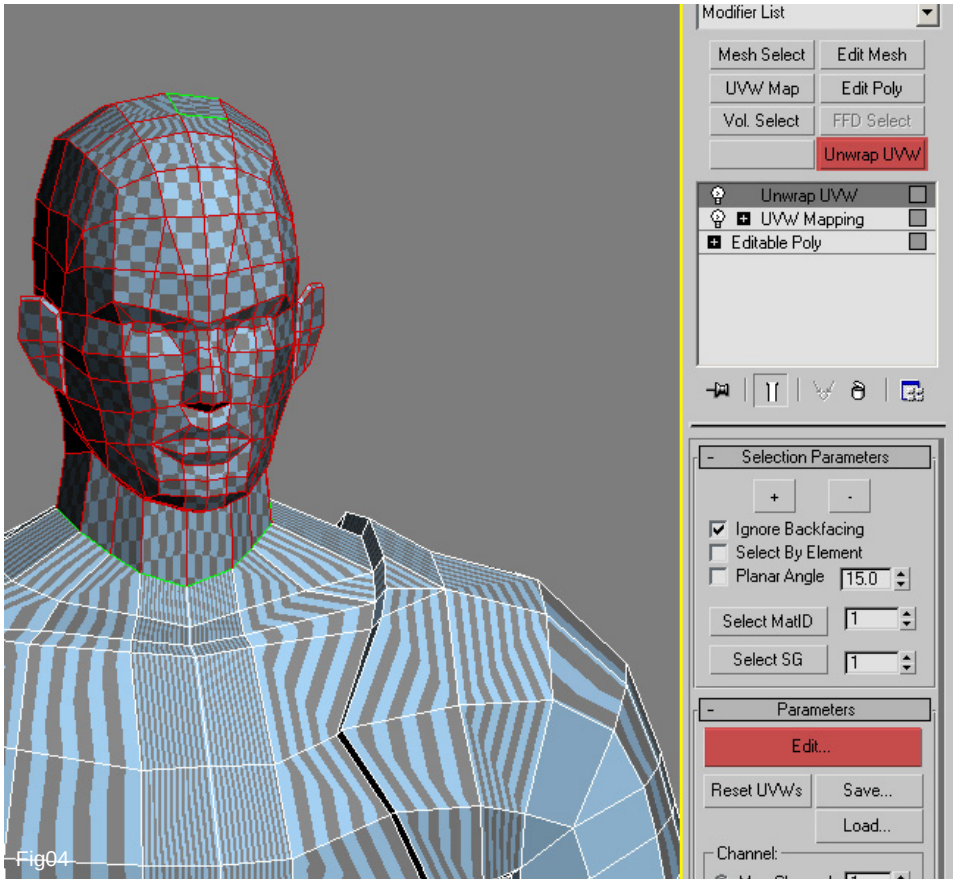


Fig04

in red in Fig02). This will bring up the map browser where you need to select Bitmap at the top (bottom right of image). Click on Ok and the map should appear on your mesh – if not click on the checker cube along the toolbar (ringed in red). You will now see a very messy checker map across your character which will require mapping. The checkermap will eventually be substituted by our painted template and the idea is that if the squares appear correctly so then will the finished texture.

3. The first step to correcting this is to apply the UVW Mapping modifier which you can find in the modifier list. Before doing this select all the poly's that make up the head and neck area as seen in Fig 03. Now apply the mapping modifier which you can see in the upper right and click on the little + symbol and highlight Gizmo. Now select the Cylindrical radio button just below and click on the Fit tab as highlighted in red. You should now see the yellow cylinder fit neatly around the selected poly's with a green line representing the seam which you want to align with the edge along the back of the head. If it dos not appear in the correct position simply use the rotate tool on the main toolbar to move it. Hopefully you should also see a much more consistent checker pattern too.

4. The next stage in the process involves applying the Unwrap UVW modifier directly above the mapping with the poly's still selected. You can see the modifier in the stack on the top right in Fig 04 and the selected poly's highlighted on the left. This modifier enables us to manipulate the mapping co-ordinates and move UVW verts and faces that correspond to those on the mesh – in other words we can transform the mapping so that we get a true and proper checker map without any obvious distortion.

5. In order to do this click on the large Edit tab under parameters to open up the Edit UVWs window (Fig 05). This window gives us access to our mapped geometry in the form of a flattened lattice of verts and faces – in this case a head and neck area. You will notice along the top of the window are some of the standard transform tools and in the window itself you will see a blue square that represents our template size which in this case is a1024x1024 map seen in the upper top right.

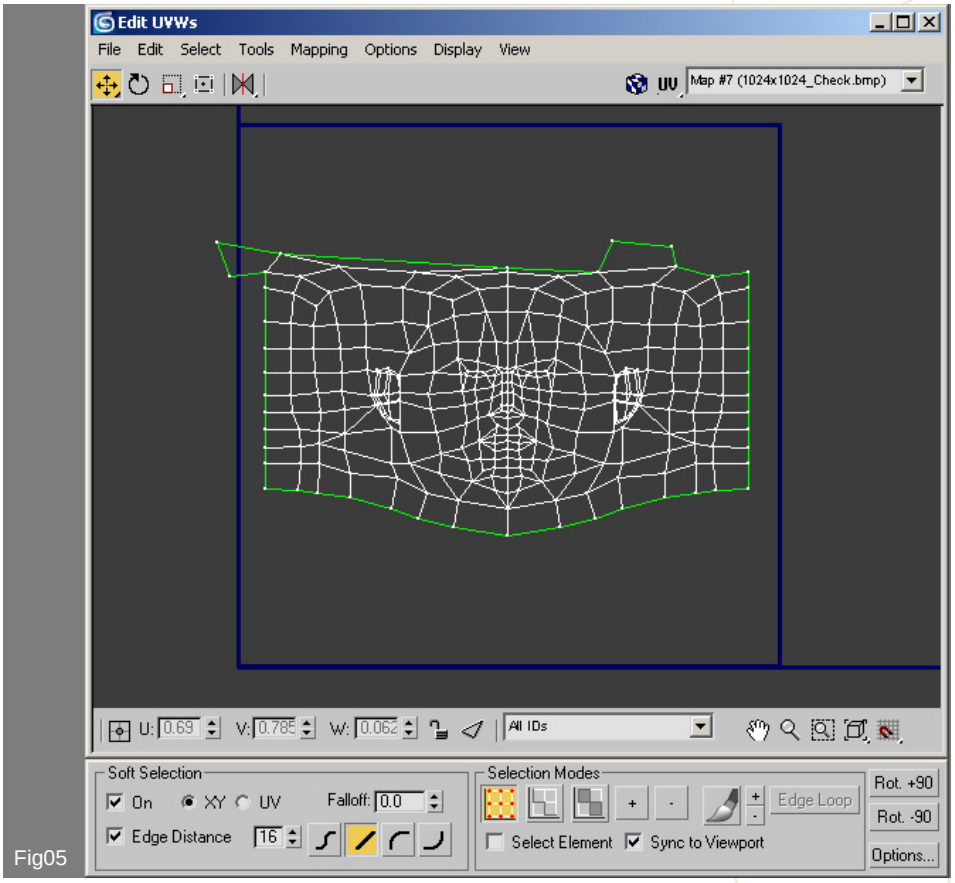


Fig05

6. Using the transform tools we can alter the mapping co-ordinates in this window which will directly affect the texture. On the left of Fig 06 you will notice a vert highlighted in red which has been moved out of alignment with its edge and as a consequence the checker map has been stretched in the corresponding position on the mesh, encircled in red. The basic premise of this part of the process is to use the tools available within this dialogue box to accurately mirror the checker map across the surface of our geometry. Start by using the scale tool to make the checkers appear square and then concentrate on details where stretching occurs. The green lines' surrounding the unwrapped head represent the seam lines / open edges and are also visible on the model in the viewport. There are two polys which you will notice fall outside of the neat edge and we shall go on to correct those later.

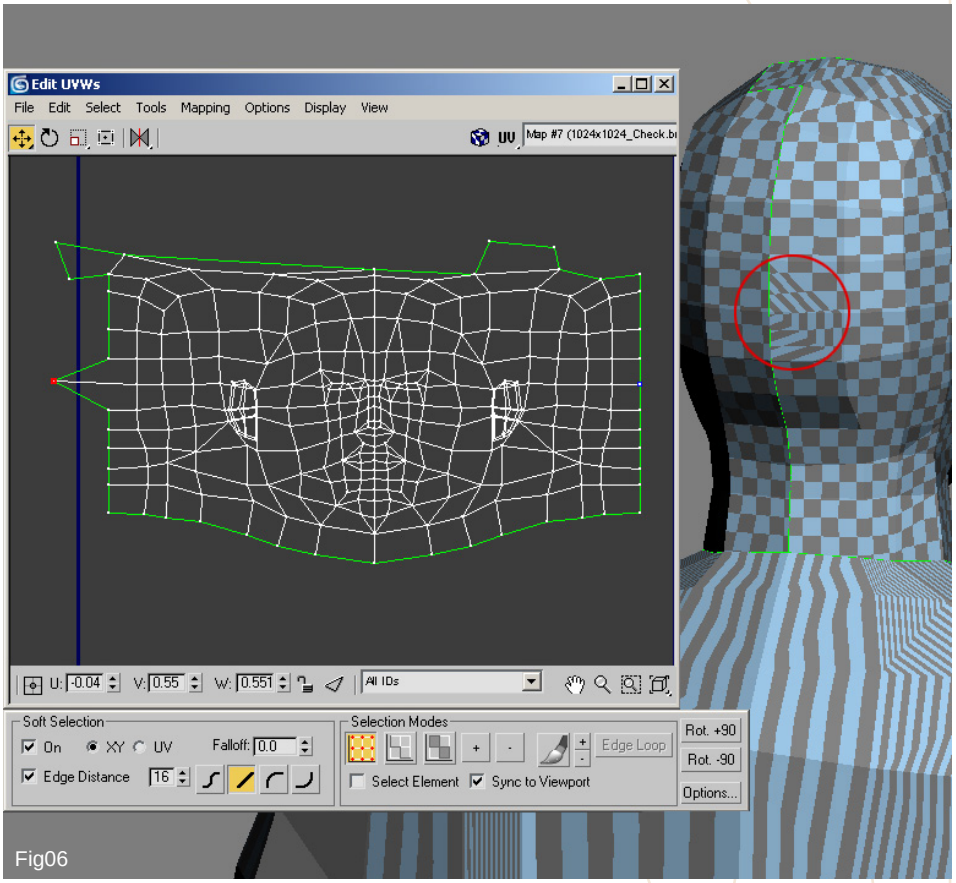
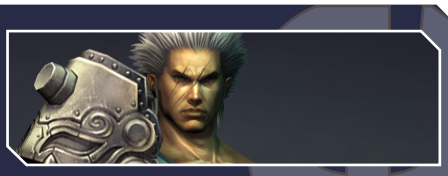


Fig06



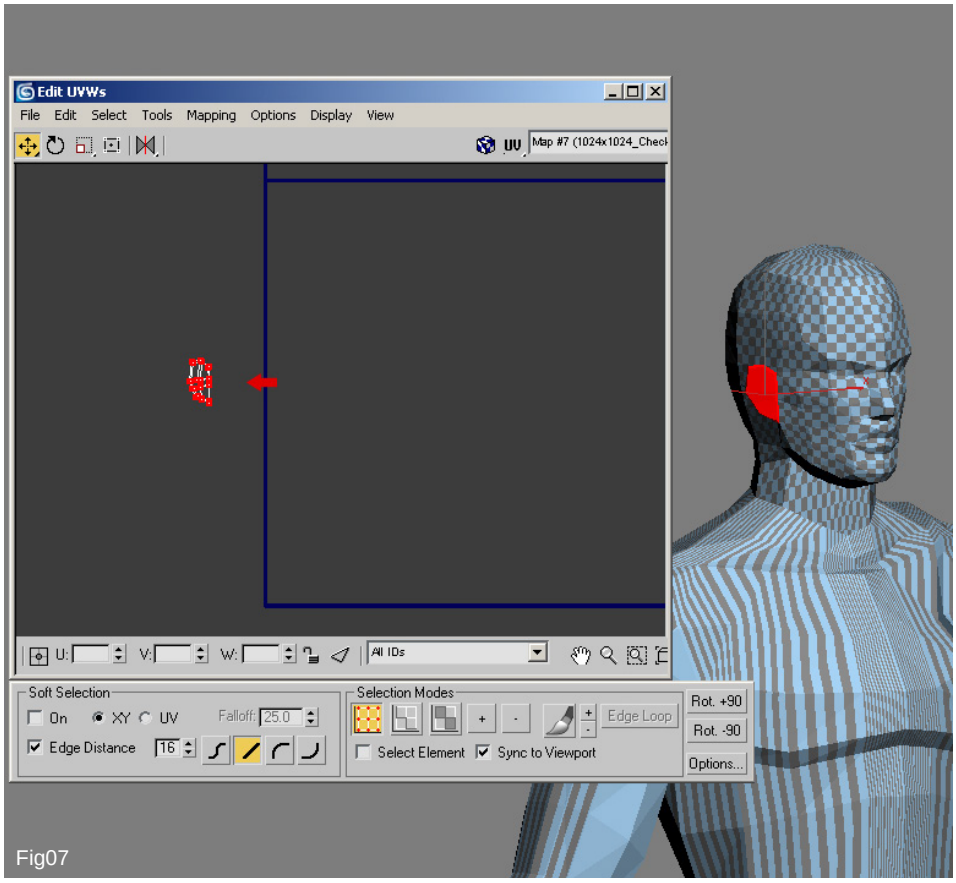


Fig07

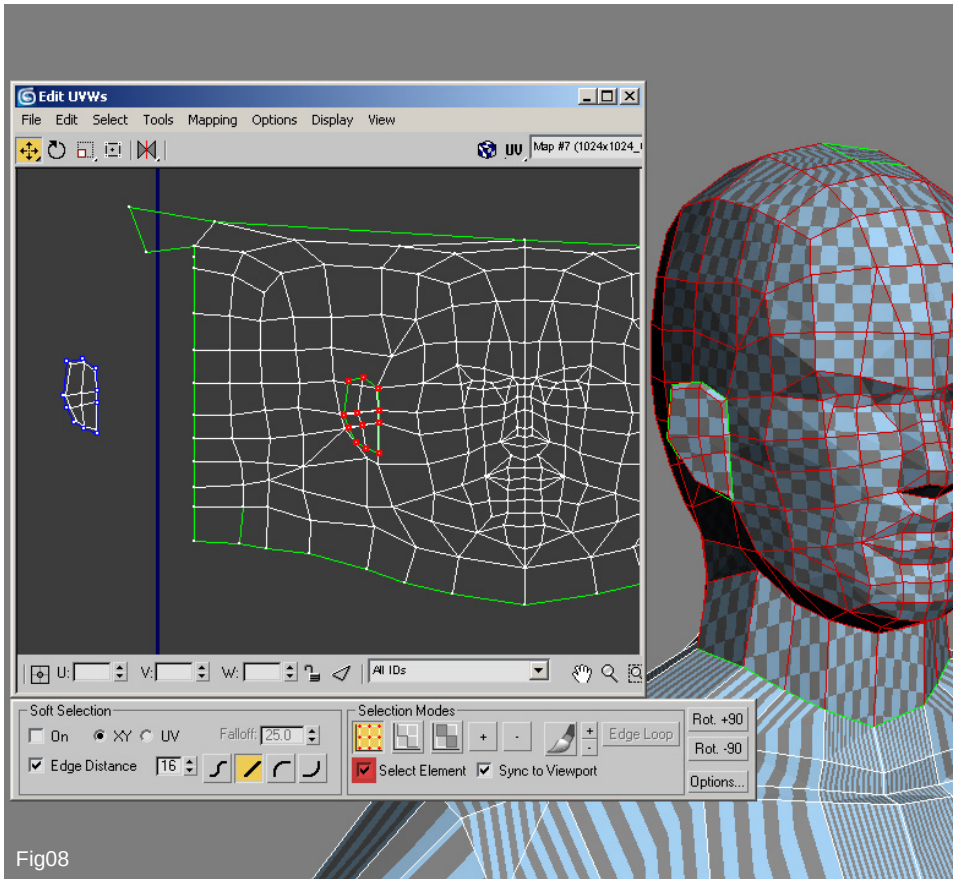


Fig08

7. The next thing to do is map the outer faces of one of the ears. The way to do this is first apply an Edit Mesh modifier on top of the Unwrap UVW and then select the necessary poly's in sub object mode and apply another UVW Mapping modifier. In the left or right viewport click on Planar under the mapping parameters, expand the gizmo as before and then click on the View Align tab. This aligns the gizmo with the view and if you wish you can use the rotate tools to better align it with the selected faces if they are not perpendicular (which they will not be) using the top view as a guide. You can then click on Bitmap fit and select the checker map and proceed by applying another UVW Unwrap modifier. It is a good policy to move any unwrapped geometry outside of the blue template square as all the geometry will inhabit this area by default otherwise when you unwrap the entire mesh you will have all the separate elements overlapping one another inside the template. (Fig 07) You can also move the mapped faces before you unwrap them as the gizmo itself represents the template shape and so if you move this in the viewports once you have applied the planar map the UVW's will appear outside the blue square when you unwrap them. It is entirely up to you which way you do things.

8. As you map your model use the checker pattern in the viewports to try and keep the squares a similar size by scaling the gizmo, so our texture will have a consistent resolution. We will actually break this rule later on but for now just unwrap everything to a similar size. If you map some geometry and forget to move it outside the template boundary you may find when you unwrap it along with further poly's later on there will be some overlapping as we have mentioned. In Fig 08 we can see an example of this. We see the previously mapped outer faces of the ear already outside the template but when the inner ones were mapped they were not moved. When the entire

head is selected we see the ear overlapping the face. Instead of selecting all the culprit verts individually we can tick the Select Element box at the base of the window (highlighted in red) and then move the whole piece across. You will also notice that the outer verts of the other half of the ear are highlighted in blue. These correspond with the verts that occupy the same space on the actual model and are welded together. The idea is that if we wish to unwrap the model in large sections we know which verts to weld in the Edit UVWs window which we will do next.

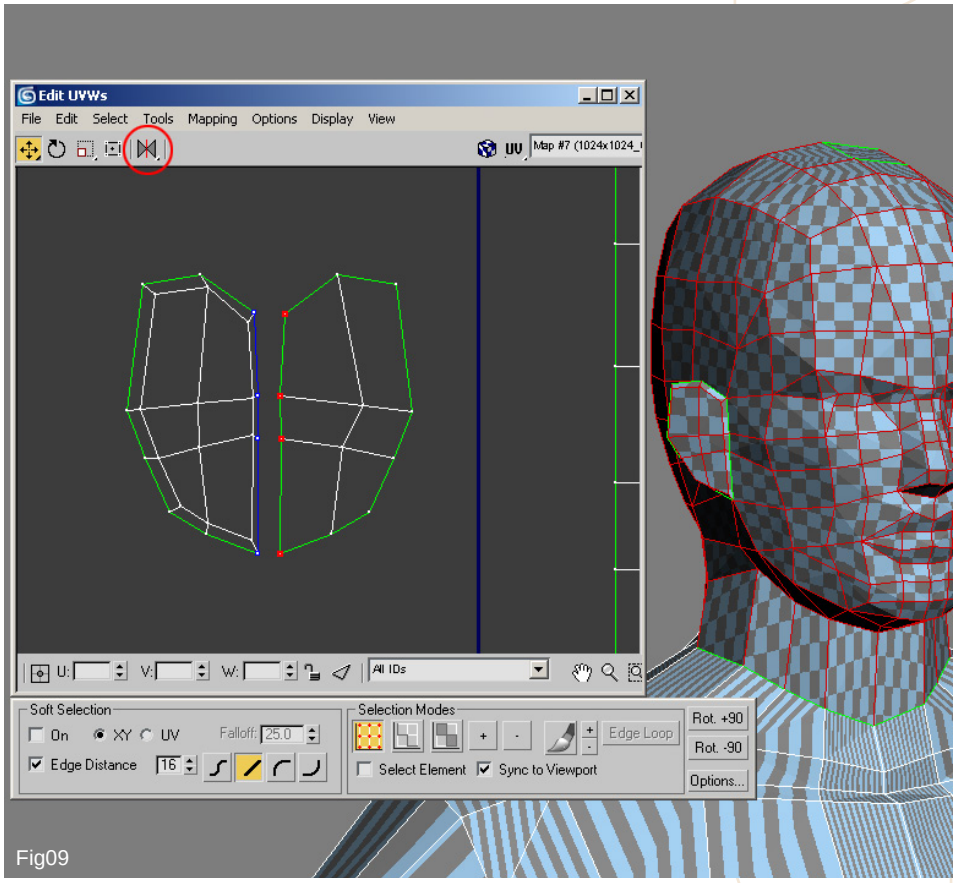


Fig09

9. First thing to do is move the inner faces of the ear outside and scale them to match the outer facing sections. At the moment the two halves have the same orientation so the newly mapped faces need to be flipped horizontally. Select all the verts and click on the symbol ringed in red along the top of Fig 09. Now select the left edge of verts and you will see the ones that correspond in blue alongside.

10. Make sure that the two sections of the ear are very close and then region select two adjacent verts and then right click and you will see four context sensitive quads appear. Scroll down and click on Weld Selected as shown in Fig 10. To make sure you weld both open the Options by clicking on the tab in the bottom right (highlighted in yellow) and turn the Weld Threshold up to 10.0. As open edges are welded so some of the green seam lines become white to indicate they are now closed.

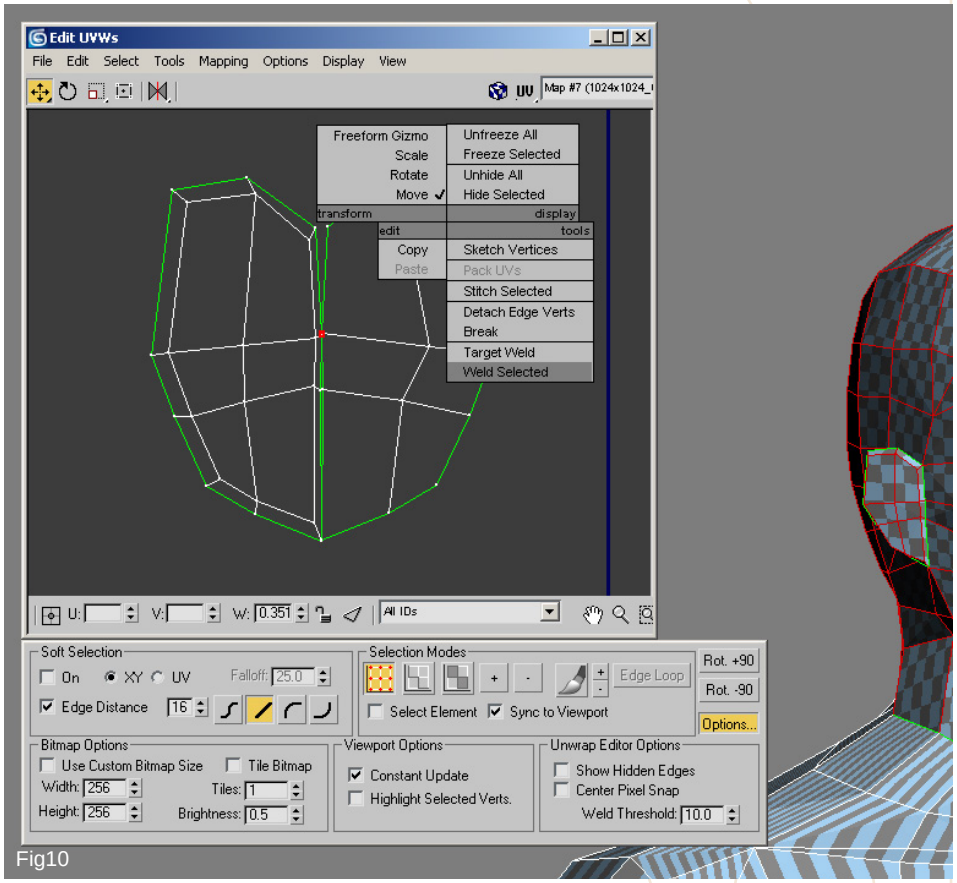
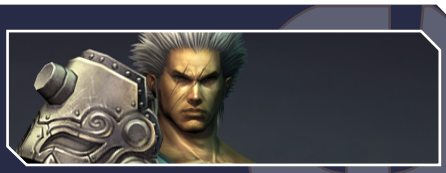


Fig10



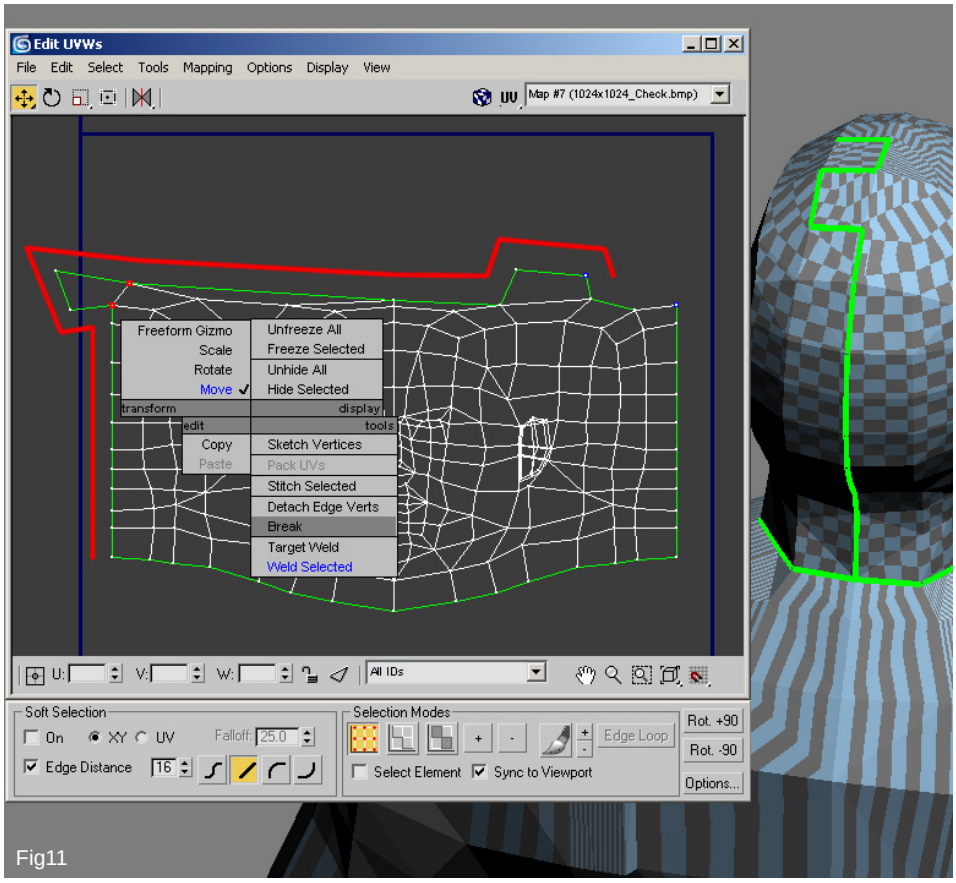


Fig11

11. As we mentioned earlier we shall now go on and fix the two stray poly's along the top edge. In Fig 11 we can see how the edge traced in red mirrors the seam line across the head model in the viewport. What we really want is a neat, straight line running from the neck to the top of the scalp. Select the two verts in red, right click and then click on Break as shown in the image.

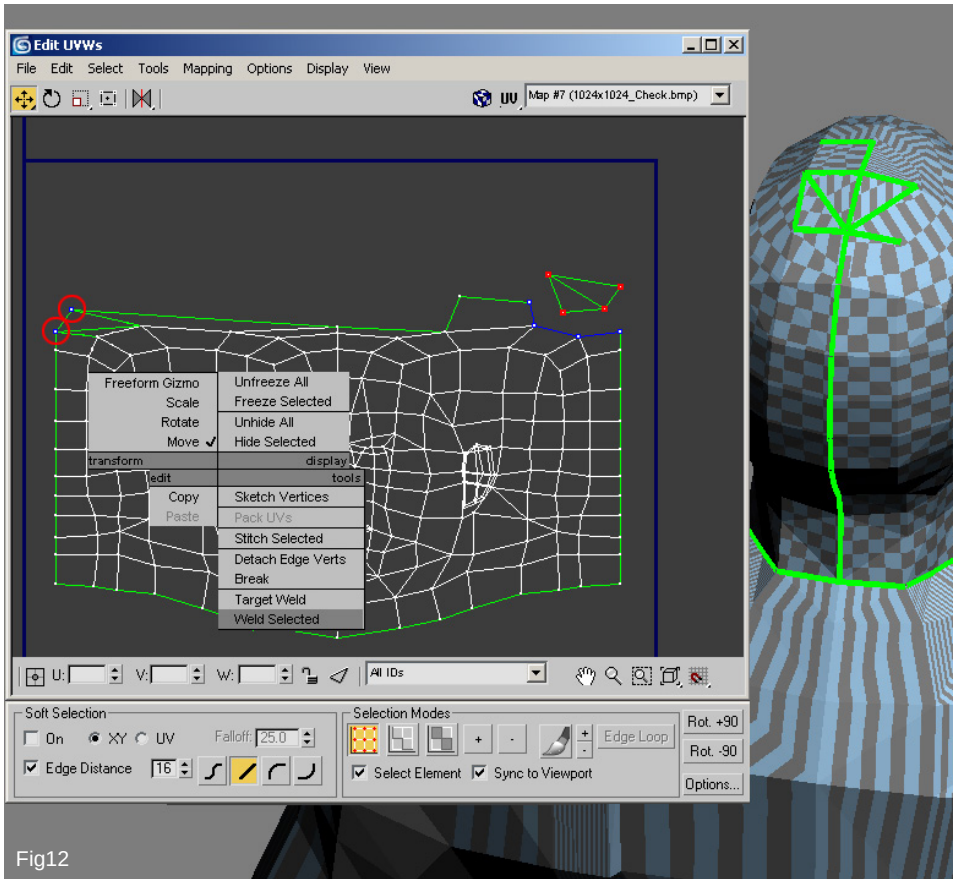


Fig12

12. Tick the Select Element box and then move this poly across to the right side where it belongs as shown in Fig 12. You do not need to worry about welding it up for now. We now have two sets of two verts which we need to weld together to close the three open edges seen in green on the left. Region select the two groups ringed in red and then weld them to close the edges.

13. Close the UVW Unwrap window, apply an Edit Mesh modifier on top of the stack and then select the half of the head in sub-object poly mode that has not had the ear unwrapped. Delete these polys and then apply another UVW Unwrap. Now move the verts around along the top edge using the checker map as a guide to improve the distortion across the scalp. Do not worry about it being perfect as there will be some degree of stretching but it will eventually be concealed by the hair anyway. You should aim for something similar to the shape in Fig 13 with a nice neat seam line through the center.

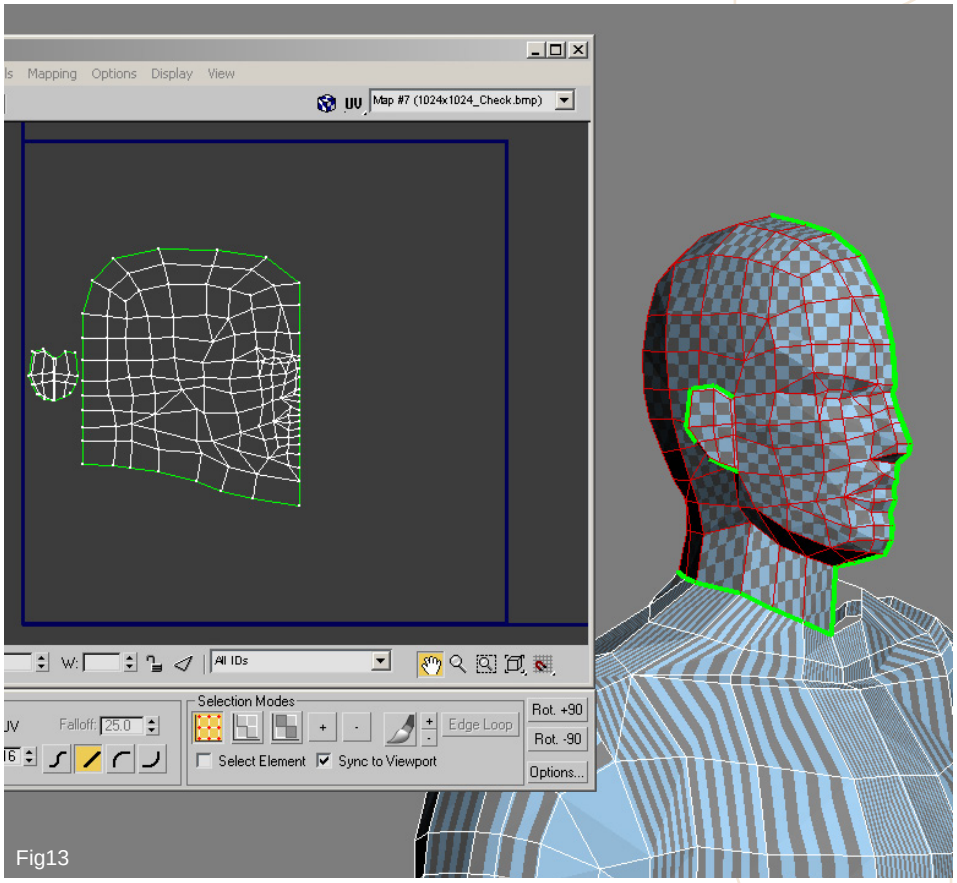


Fig13

14. Close the window and collapse the stack and then in sub-object poly mode duplicate the head and neck area that has been mapped. With this new half selected apply a UVW Unwrap and you will notice that you see an exact copy what we have done so far. This is because duplicate geometry carries with it any mapping co-ordinates that have been applied. Move the entire unwrap aside away from its current position. Now close the window, weld the two halves of the head together and then select all the poly's that make up the head / neck. Apply another UVW Unwrap and you will notice that you have two identical halves. Flip the newly unwrapped section and then move them next to one another so the central line of verts overlap down the middle of the face as seen in Fig 14. Turn the Weld Threshold down to 0.01 (bottom right) and then with all the central verts selected click on Weld Selected. You should now have a completely mapped head with a seam around the base of the neck and from the top of the forehead to the top of the shoulders.

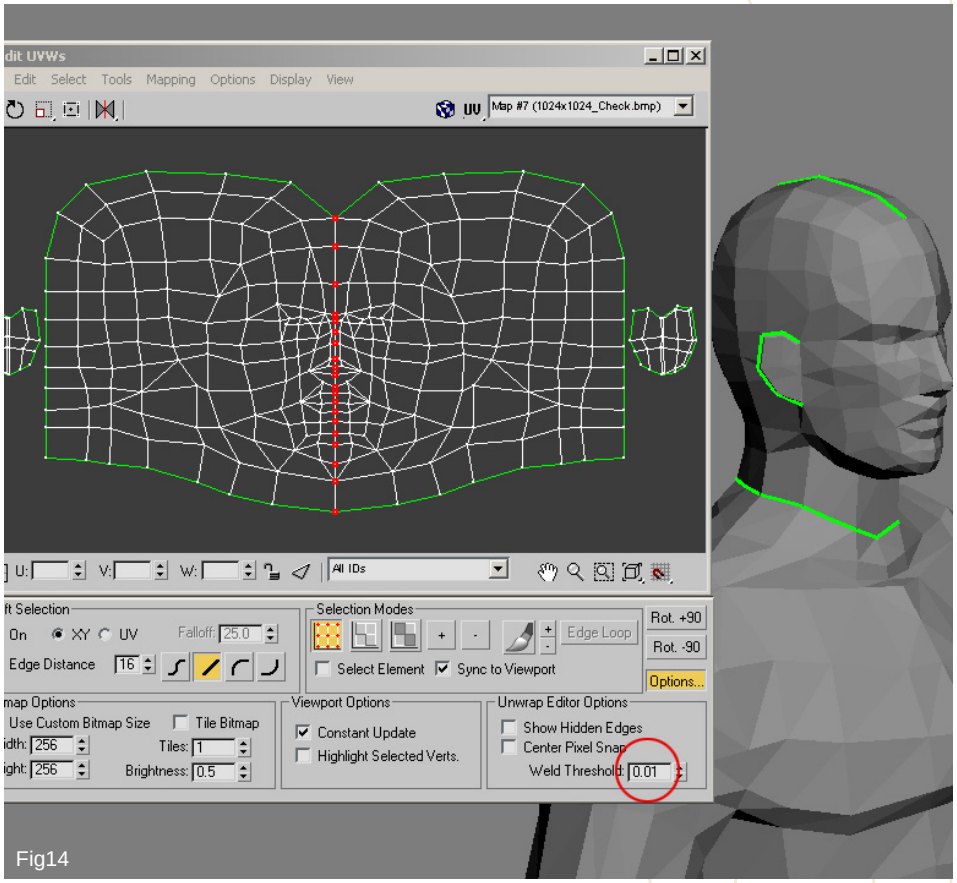
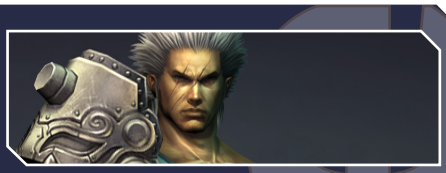


Fig14



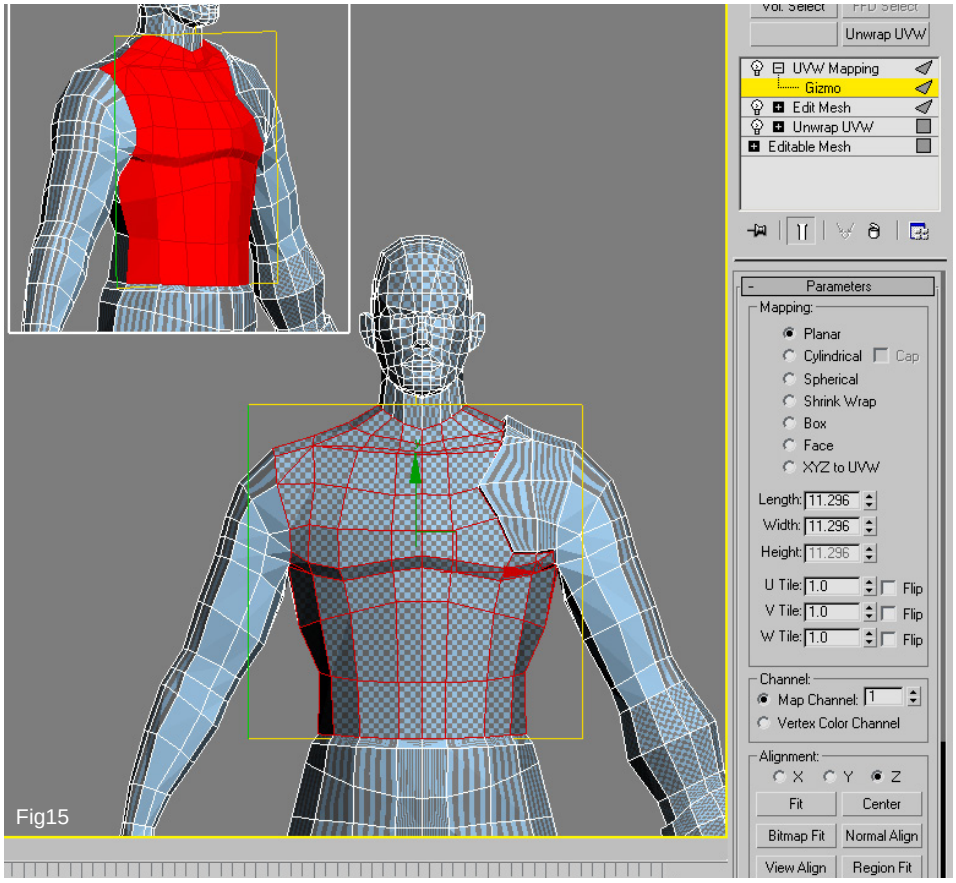


Fig15

15. Now it is time to move onto the torso. Select the front half of the body from the neck line down to the trousers and half way around the side as seen in Fig 15. As with the ears apply a Planar map whilst in the front viewport making sure to then click on View Align and then Bitmap Fit under the Alignment parameters.

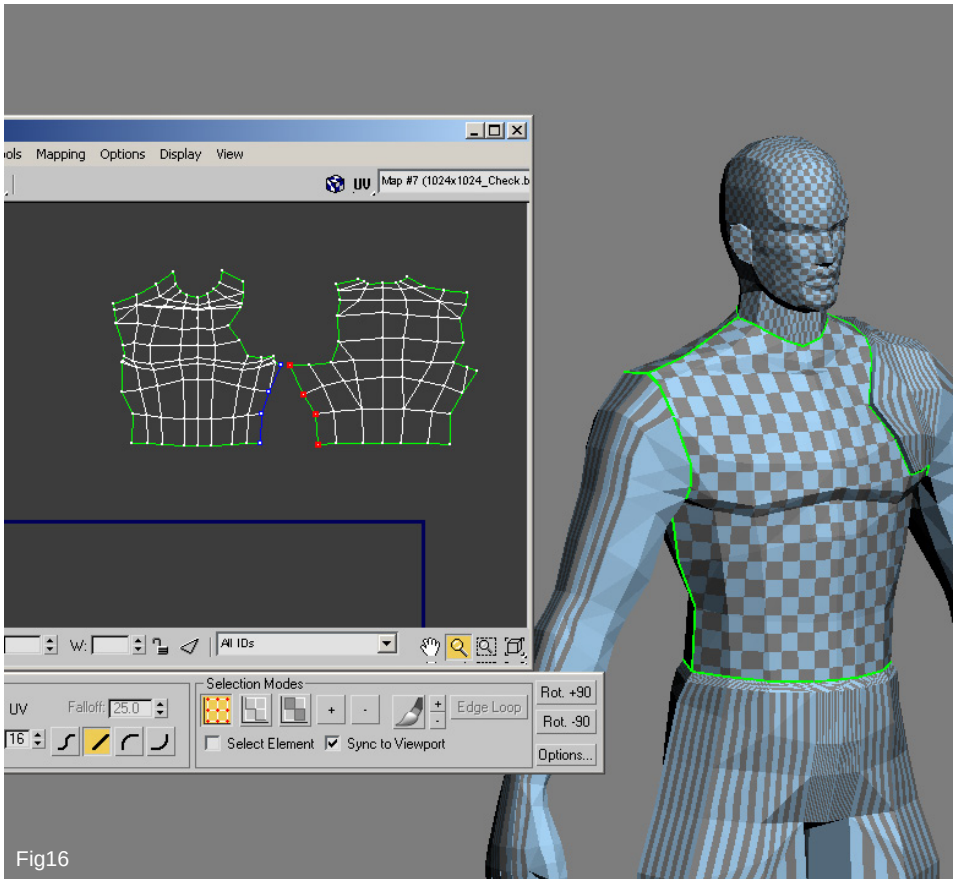


Fig16

16. Follow the same procedure for the back to complete the torso area and then with all of these poly's selected in sub-object mode apply an Unwrap UVW. In Fig 16 you can see that I have moved the two pieces alongside one another with the intention of welding the verts highlighted in the top left which run under the arm. You will also notice that the two sections have been moved outside the template and are currently of a lower resolution than the face due to the larger checker pattern.

17. In Fig 17 you can see that the verts have now been welded and the section scaled to make it more consistent with the head. You will have to re adjust the verts in the Edit window once welded in order to reduce some of the distortion.

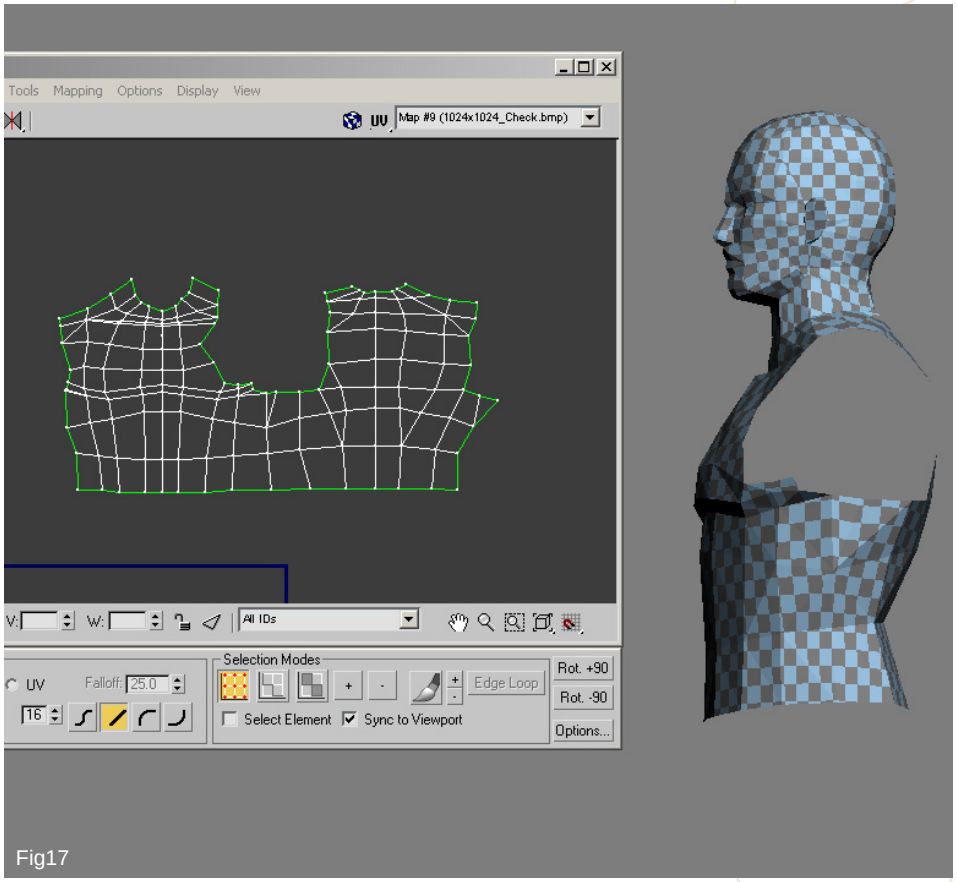


Fig17

18. Now it is time to deal with the limbs. As you saw with the head any mapped geometry that is duplicated retains its mapping co-ordinates and so to save time delete one complete leg from the waist down (inset 1 in Fig 18). Now select all the poly's that make up the trousers barring the three quads under the groin (inset 2). Apply a Cylindrical map making sure to click on Fit and then rotate the gizmo so the green line is aligned with the inside edge as closely as possible (see main image). Then Unwrap this section exactly as we have done before. The basic procedure that will be repeated throughout this tutorial is to select poly's in sub-object mode, apply the UVW Mapping modifier followed by the Unwrap UVW. Then apply another Edit Mesh on top of the stack and when the stack gets a little too big just collapse it – you will not loose any of the mapping!

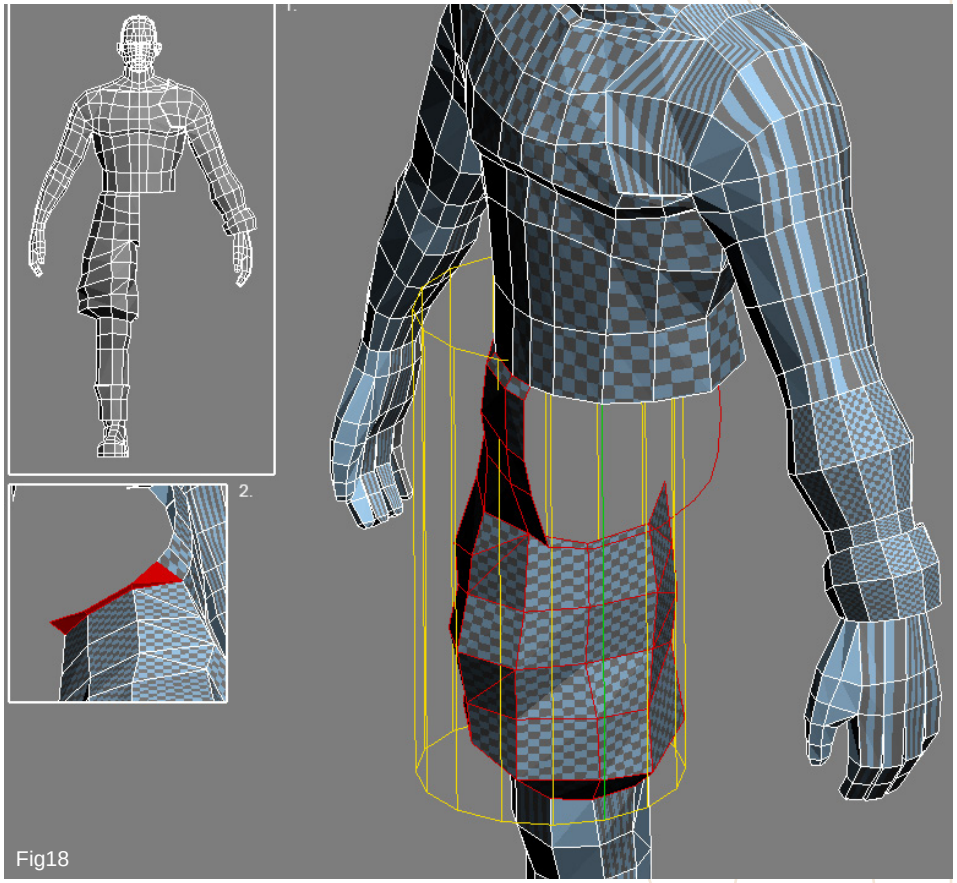
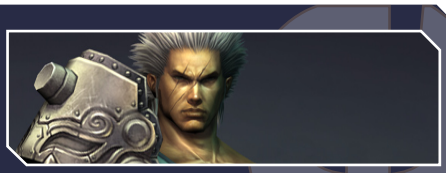


Fig18



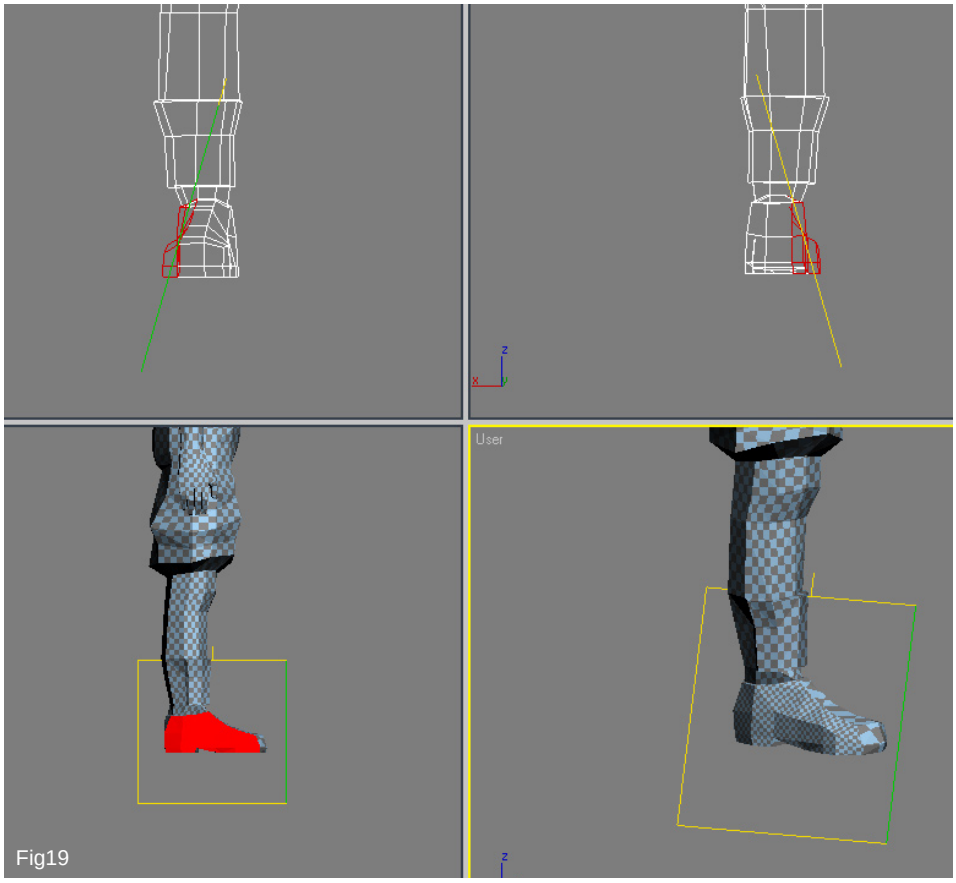


Fig19

19. You can follow the same procedure with the lower leg using a cylindrical map and then transforming the verts in the Edit UVWs window to refine the mapping. With regard to the feet simply apply a planar map from the left and right sides as seen in Fig 19. You can see in the top views that the gizmo has been rotated to better align it with the general direction of the polygons.

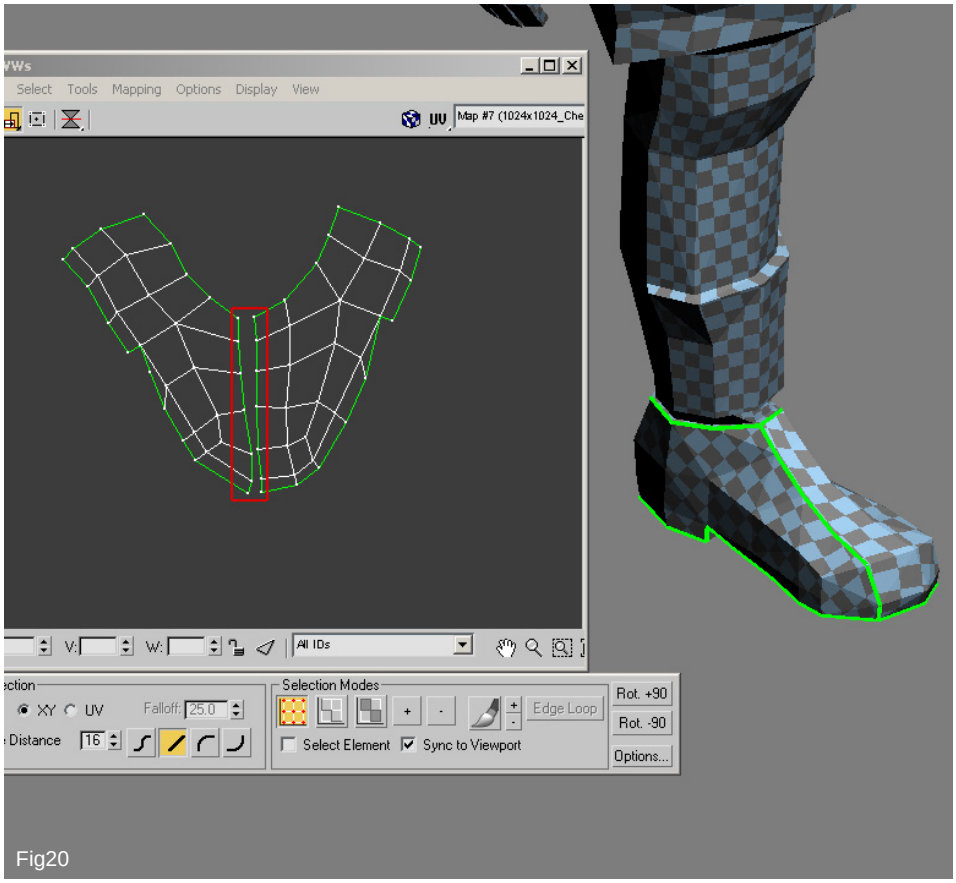


Fig20

20. When both sides have been mapped unwrap the whole foot except the sole and then rotate and move the two respective sections together as seen in Fig 20. Weld the two edges of verts within the red rectangle to close the seam line seen running down the top of the foot on the right. Then tweak the vert positions to minimize any obvious distortion.

21. Now it is on to the arms using the same procedure again really. In Fig 21 you can see a cylindrical map being applied to the left arm. It runs from a line at the top of the shoulder down to the wrist. You can see that I have rotated the gizmo to follow the orientation of the arm using its local co-ordinates (highlighted in red along the main tool bar). You will also notice in the inset that I have positioned the green seam line on the inside of the arm in a less conspicuous place. When you select new groups of Poly's you will automatically be creating a seam line along the boundary at which the selection ends and so it is important to think about where to place these. Adhere to natural seams in order to ease the texturing process such as the top of the trousers and edge of the armour but other than that decide on where they will be least visible.

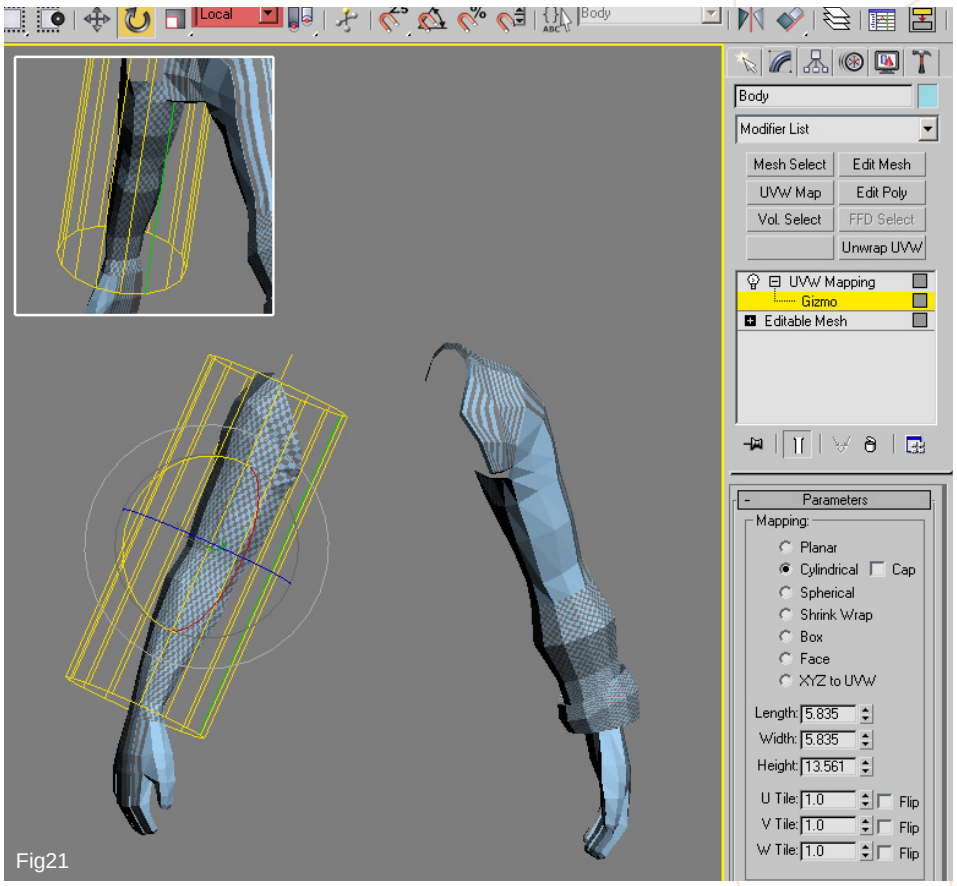
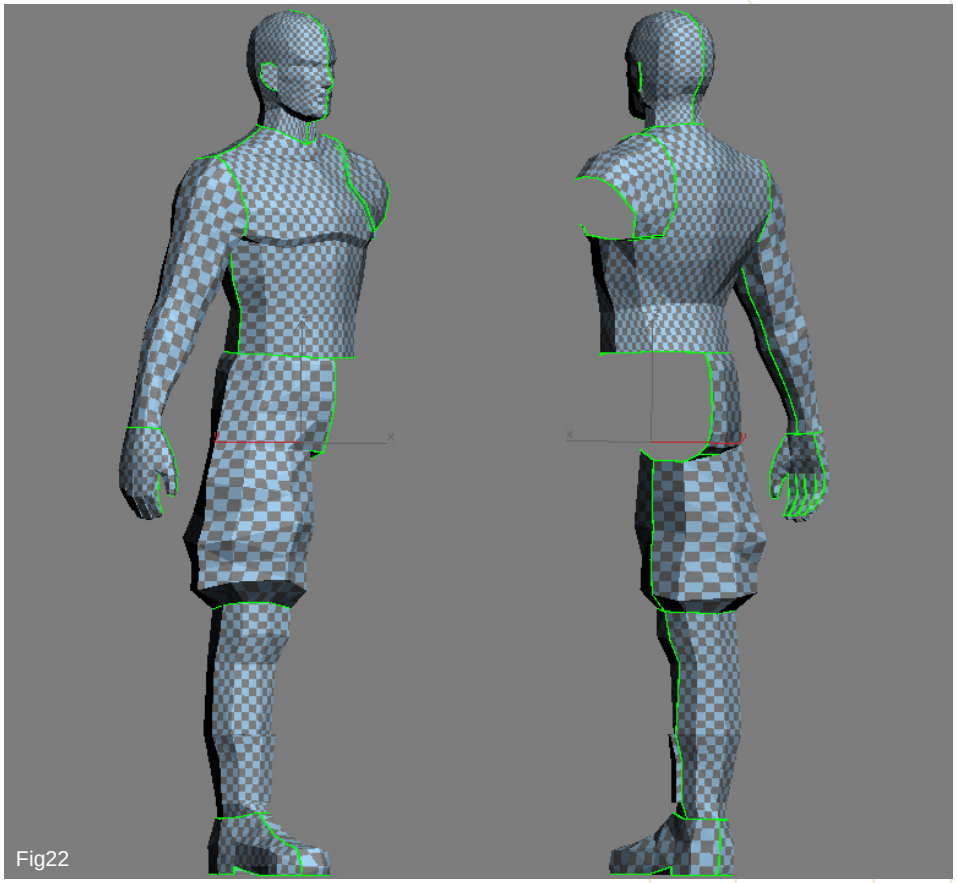
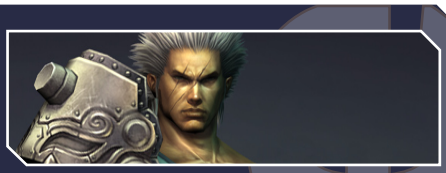


Fig21

22. In Fig 22 you can see that the seam lines on the limbs are on the inside as this is usually the least visible area. This means that if there are any problems with edges not matching exactly on the final texture they will be less noticeable here. On the torso you can see one seam line on one side under the left arm and there is one above the top and one below the trousers. This is a good area to have them ensuring a sharp edge to where the texture changes on the character, similarly with the shoulder armour on the right arm. The seam line down the front of the trousers and face will eventually disappear when the mesh is complete.


Fig22



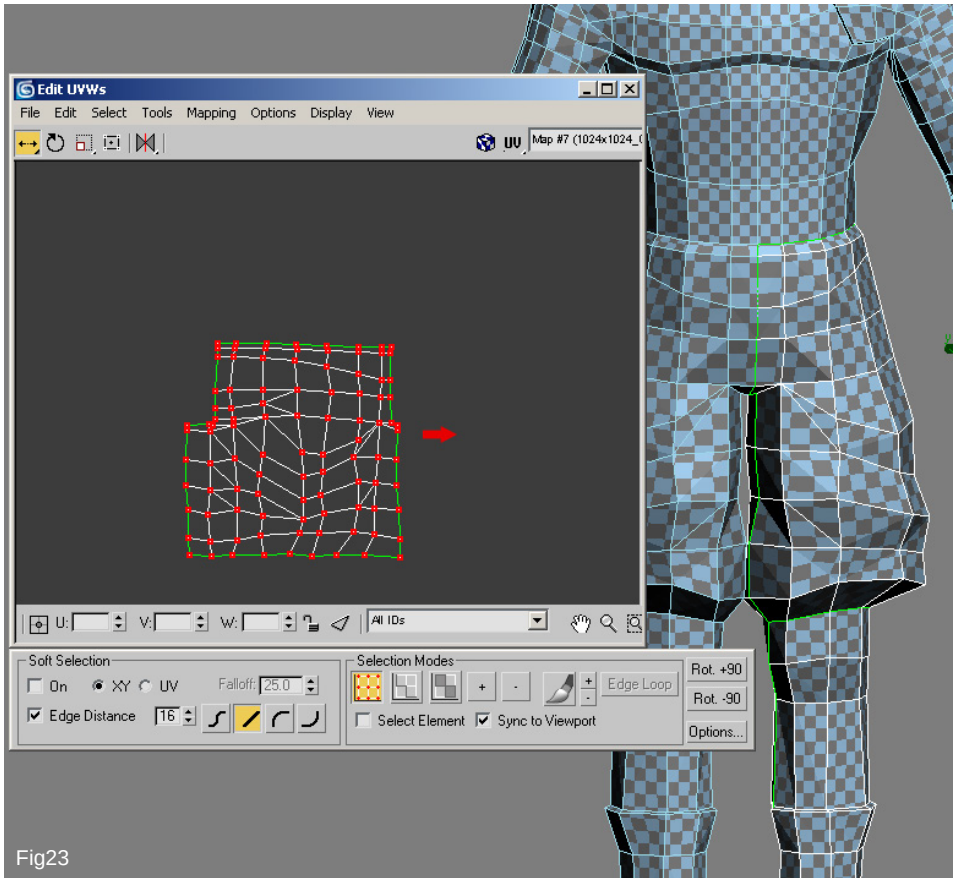


Fig23

23. When the leg is fully unwrapped it is time to copy it over and weld it to the main body. In Fig 23 you can see the duplicate leg on the right which is still a separate object. Before welding it up move the UVW's – of which the trouser section is shown in the window on the left. With the entire leg section shifted over now weld the mesh together.

The hand can also be mapped and then copied over and re-scaled but you may want to map the two arms separately as they are slightly different – it is up to you really.

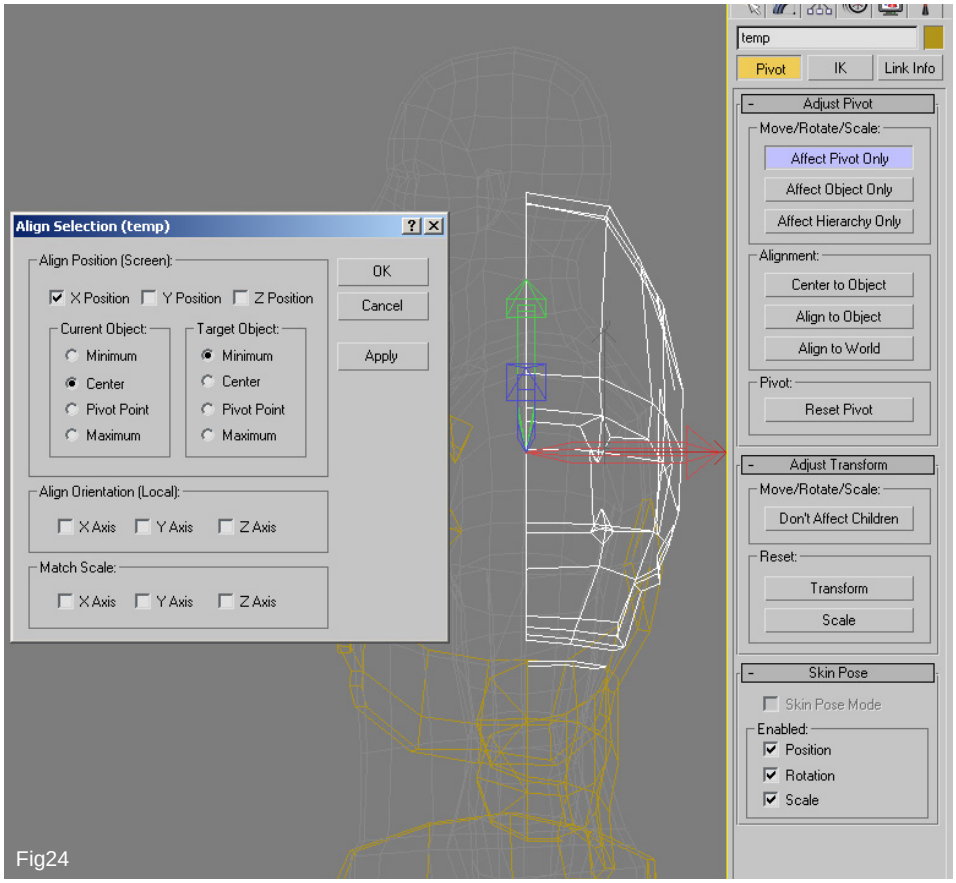


Fig24

24. Now it is time for the armour pieces – the first of which is the main shoulder section. As this is symmetrical we can delete one half to start with. Before we start to map it we are going to alter the pivot point. Click on the hierarchy tab at the top of the Modify panel and then on the Pivot tab (highlighted in yellow in Fig 24). This will show the pivot point of the object in question (the three arrows in the main window). We need to align this with the center of the open edge as seen in the image. You can do this by clicking on the Align tool on the main toolbar and then entering the values as shown in the dialogue box on the left. If your pivot point has a different orientation you will need to change the parameters accordingly but the main thing is to get the pivot point aligned with the open edge even if it is not central.

25. Now map both sides separately using a planar map, rotating the gizmo to keep the checker pattern as accurate as possible (Fig 25). Once done, duplicate the piece by first selecting the whole object and then clicking on the Mirror tab on the main toolbar.

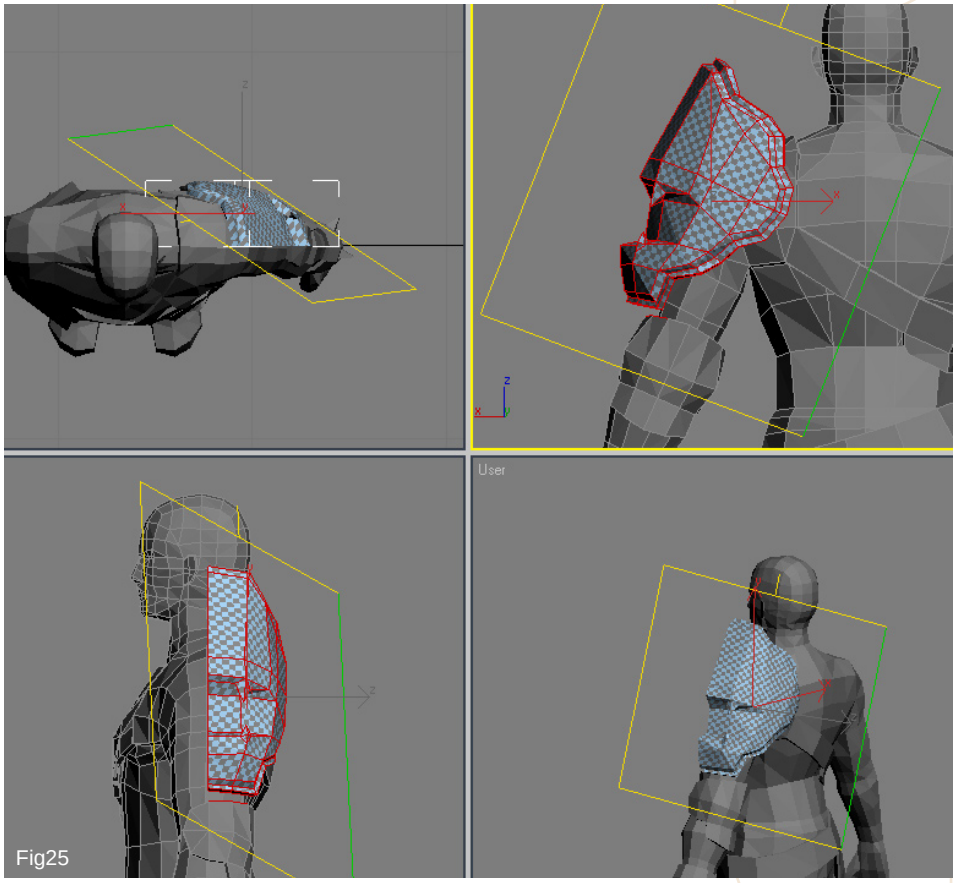
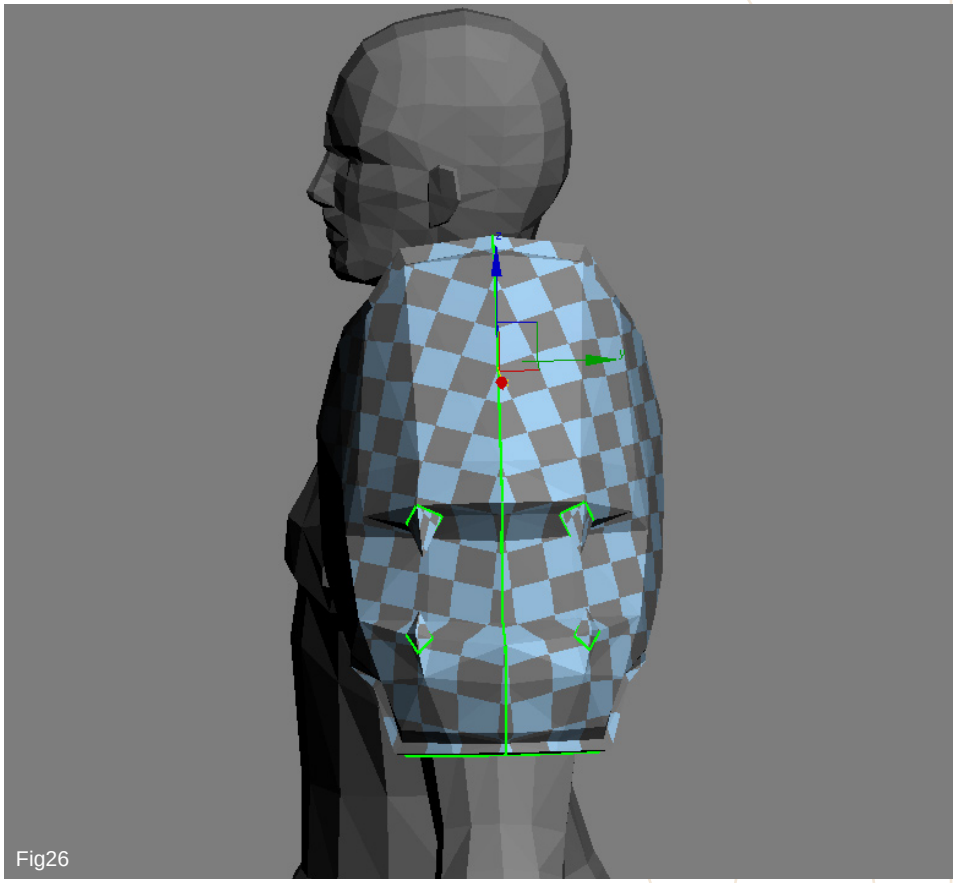
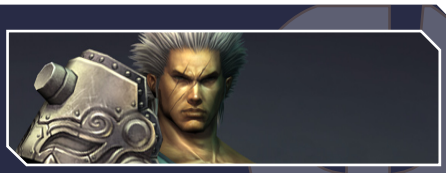


Fig25

26. When the dialogue box opens select the No Clone radio button and either the X, Y or Z radio button above to give you what we see in Fig 26. You can use exactly the same methods to map all the armour pieces. In the case of the accessories you can planar map all of these and will not need to do anything different to what we have done already. Once you have finished with the armour and clothing it is time to move onto the hair. Because there are many pieces that make up this area it is unnecessary to individually map every element as it would take up far too much texture space. There will be just under fifty separate meshes that make up the hair but we will only have to map nine of these. The idea is that we map the nine sections and then duplicate them to make up the rest of the hair.


Fig26



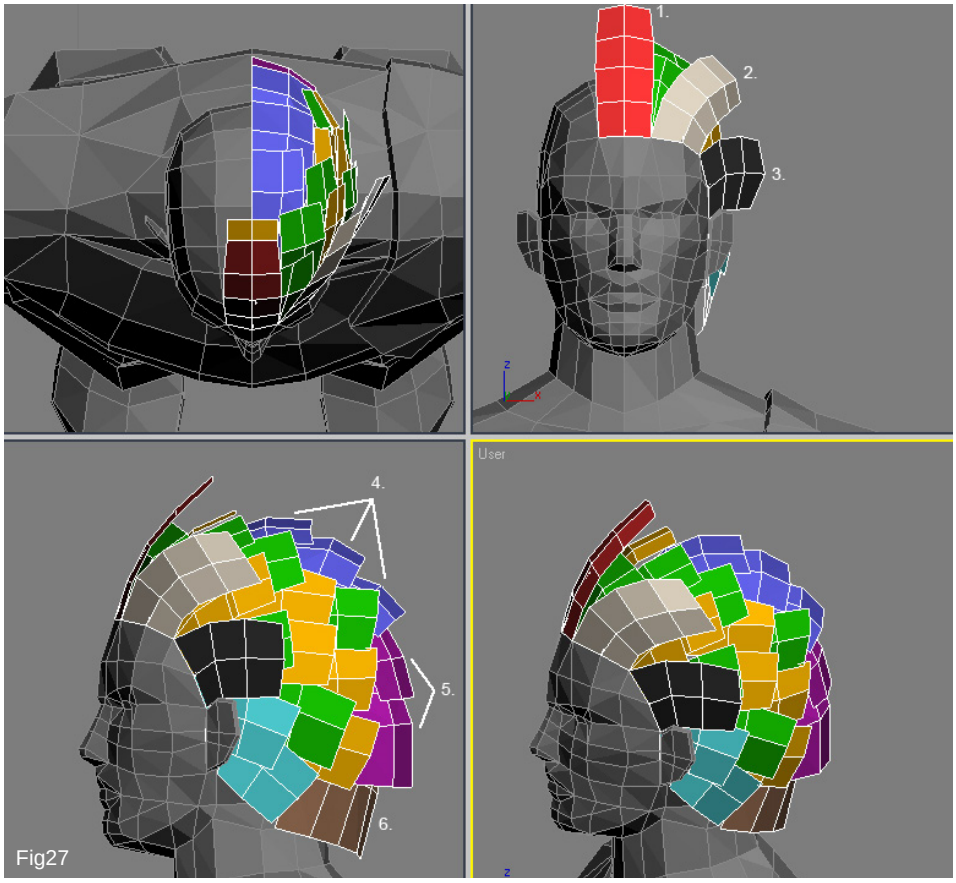


Fig27

27. These groupings are visible in Fig 27 and are colour co-ordinated to show how they have been organised. In the top right you can see that the front three poly's have been separately mapped (numbers 1-3). Along the top of the head there are three blue poly's so you would only map/unwrap one and then copy this twice, snapping the verts to line up exactly with the remaining groups. There will off course be a bit of stretching on the checkermap as each of the meshes varies slightly but nothing serious. When this is done delete the two redundant versions and then repeat this until you have completed the rest of the hair pieces.

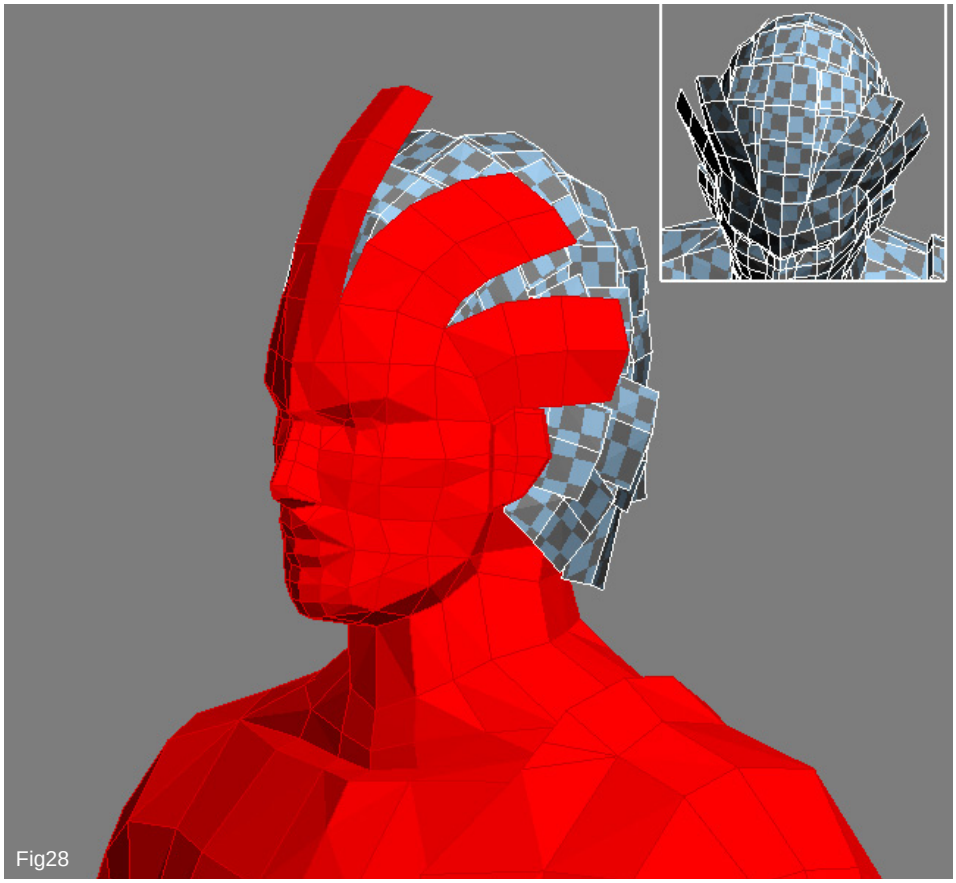


Fig28

28. When the hair section is mapped you can attach the front three sections to the main body as shown in red in Fig 28 but leave the rest of the hair pieces as separate objects; the reason for which shall be revealed next. Select the main body and apply an Unwrap UVW and then move the three front hair pieces in line with the top of the forehead, scaling them accordingly.

29. In order to save even more texture space select the row of verts highlighted in red in Fig 29 and Break them. Now move the right element of the head over to the left and overlay it with the area marked in green by flipping it horizontally. The reason is that this section of the head will be under the hair and therefore carry little detail and so can be symmetrical. More importantly the face area which is the focal point can still look different on both sides as it is mapped in its entirety. The two small purple poly's should also be broken from the main lattice and overlapped to make way for the three hair pieces which you can see have been welded to the forehead on the right. The purple and green areas showing the vertices now represent both halves of the head thus saving space which means that we can now paint a smooth transition between the face and hair line. The three hair poly's on the right of the face represent all five front pieces and mean we are also saving more space.

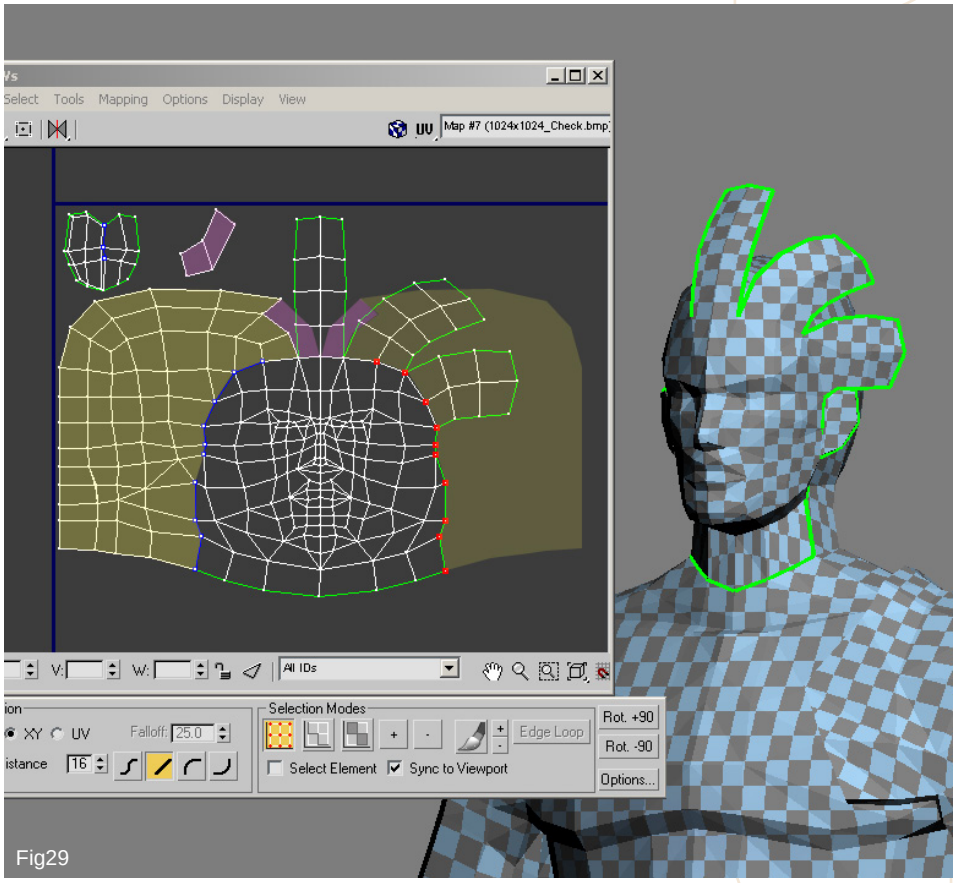


Fig29

30. This concludes the mapping section of the exercise and now we need to assign a material to our mesh in preparation for texturing by dragging the material onto each and every mesh. Open up the Material Editor and select one of the example slots. Click on the Standard tab (highlighted in red in Fig 30) and select Multi/Sub-Object from the browser. You will be prompted with a Replace Material box ; just click OK as either option is fine. You will now see ten sub-materials under the Basic Parameters– click on Delete at the top of the window until you see only three remaining. Notice how the material is now a Multi/Sub-Object material that contains three Standard materials.

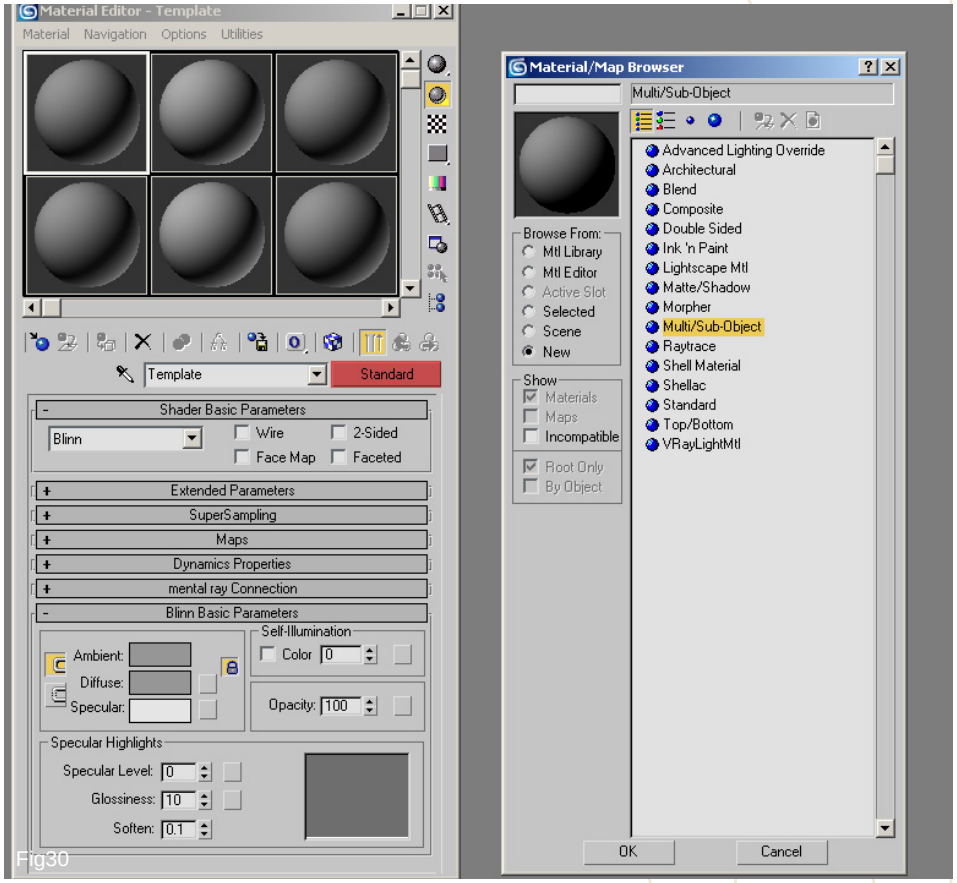
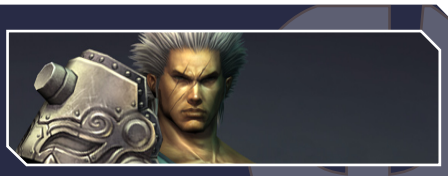


Fig30



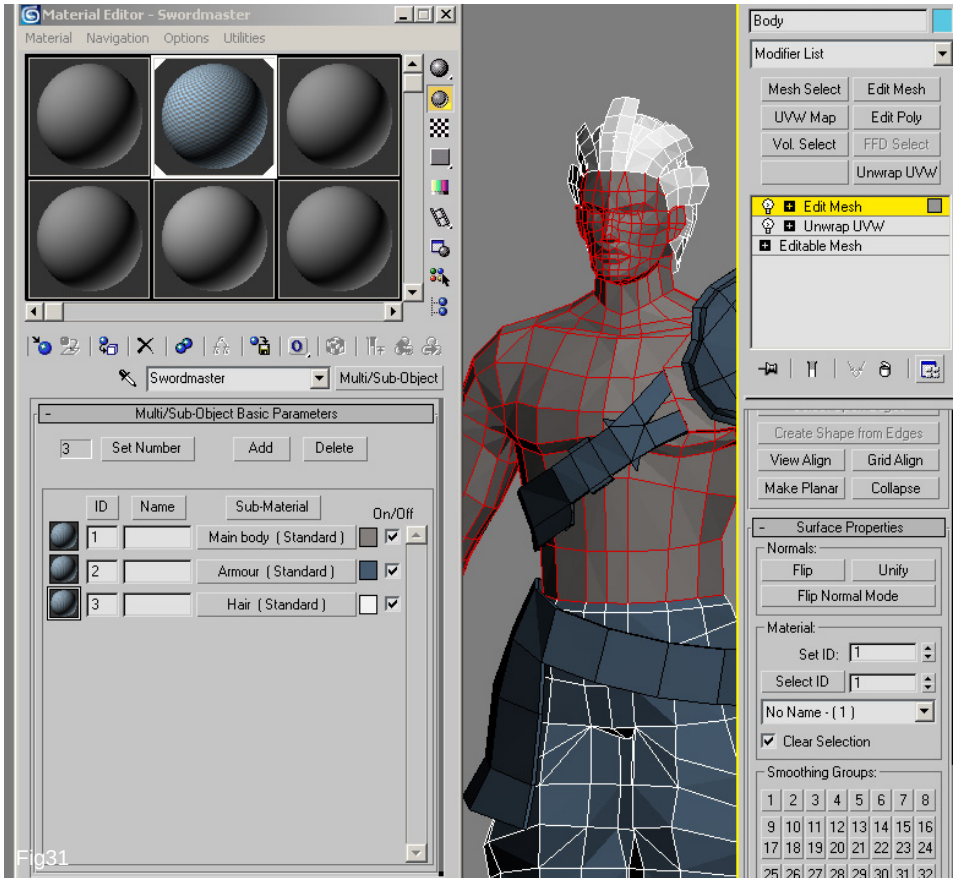


Fig31

31. Now name these accordingly as shown in Fig 31. You can also change the colour of the materials by clicking on the small colour swatch on the right so you can easily identify each one on the model. On the left of the labels is an ID column and this corresponds to an ID number that is assigned at the sub-object poly level. You can see that ID 1 represents the main body, 2 is the armour and 3 will be assigned to the hair. Now we need to select each of the meshes that make up our character and assign the appropriate numbers. So in sub-object poly mode select all the poly's that make up the body and then scroll down to the Surface Properties –Material and choose 1 next to Set ID. These should now adopt the colour schemes in the editor (in this case grey). Go on and assign the rest of the ID numbers to the model as indicated in the picture. If you wish to select all poly's of a certain ID number then use the spinner arrows in the Select ID box and then click on the tab next to it.

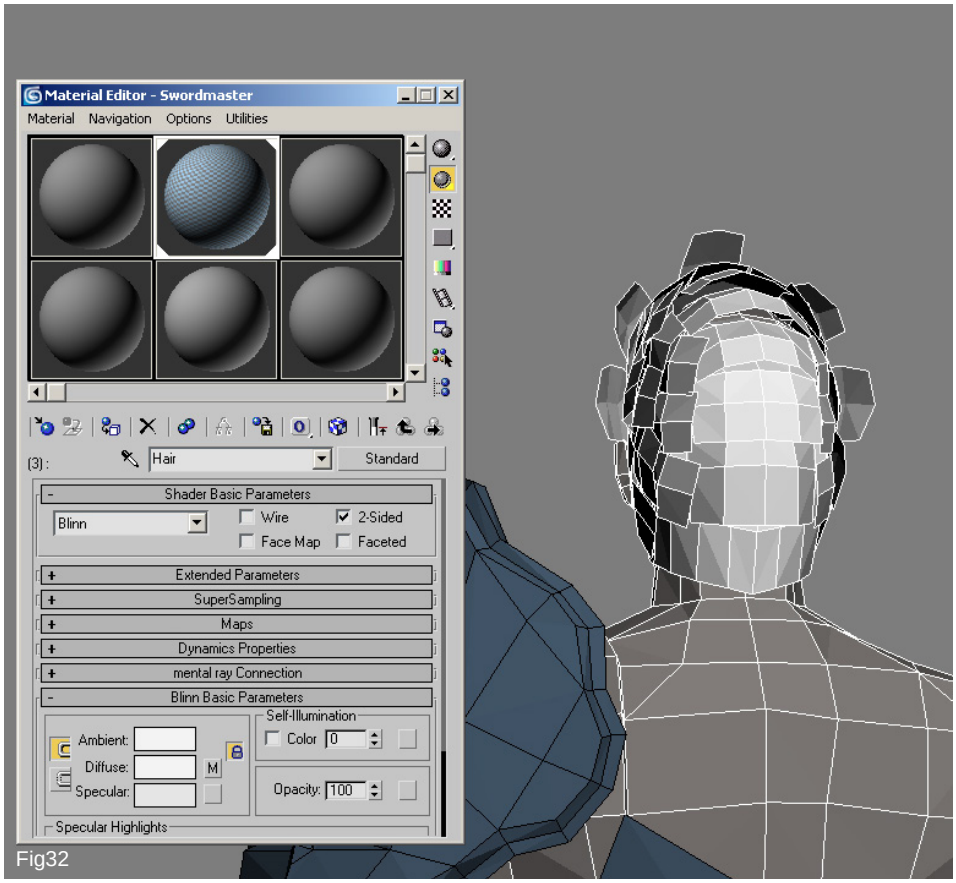


Fig32

32. Now select the hair material and check the 2 Sided tickbox as seen in Fig 32 under the Basic Parameters. This will enable the hair to be visible from both back and front and mean it will look thicker as we orientate around the character. You can see how the poly's are now also apparent from behind our character on the right of the picture. Now as you remember from earlier on in the tutorial we unwrapped each of the meshes that make up our character. Before we begin the texturing phase we need to arrange all of our pieces into a template that we will export as a wireframe and will represent our final texture layout. As there are so many elements they will not comfortably fit into one template and so we need to split them into two separate ones.

33. In order to see all the unwrapped geometry together we will have to attach all the pieces of geometry into a single mesh temporarily. Select the main body and then click on Attach in the modify panel and then select the remaining meshes as shown in Fig 33. You can see in the picture that the model on the right is a single mesh by the highlighted geometry where as the left version does not yet include some of the armour. When you apply an Unwrap UVW modifier you will now see every piece of geometry in the edit window and what you need to do now is decide which pieces to put into which template. This is entirely subjective and does not ultimately matter but keep the various pieces intact when you divide them up and avoid splitting individual pieces across two different templates. You may decide to try and keep the head and body parts together or split them up depending on how you wish to make use of the space available. You will inevitably need to re-size certain elements and I advise that you afford a bit more space to more detiled aspects such as the face and hands for example. Sometimes certain shapes fit better together and mean less wasted space but again it is a personal choice how you divide everything. Arrange as many of your chosen pieces as you can into the template and then close the dialogue box. Now make sure the same elements are attached as a single object. You will need to Detach pieces from the character and then re-attach them in the same manner as before in order to do this. You will have to do this in sub-object mode and to make things easier you can make selections in sub-object Element mode (next to polygon mode). This will enable you to select entire elements of geometry. The remaining pieces can then be attached into a second mesh that can be unwrapped in one piece and these will make up the second template.

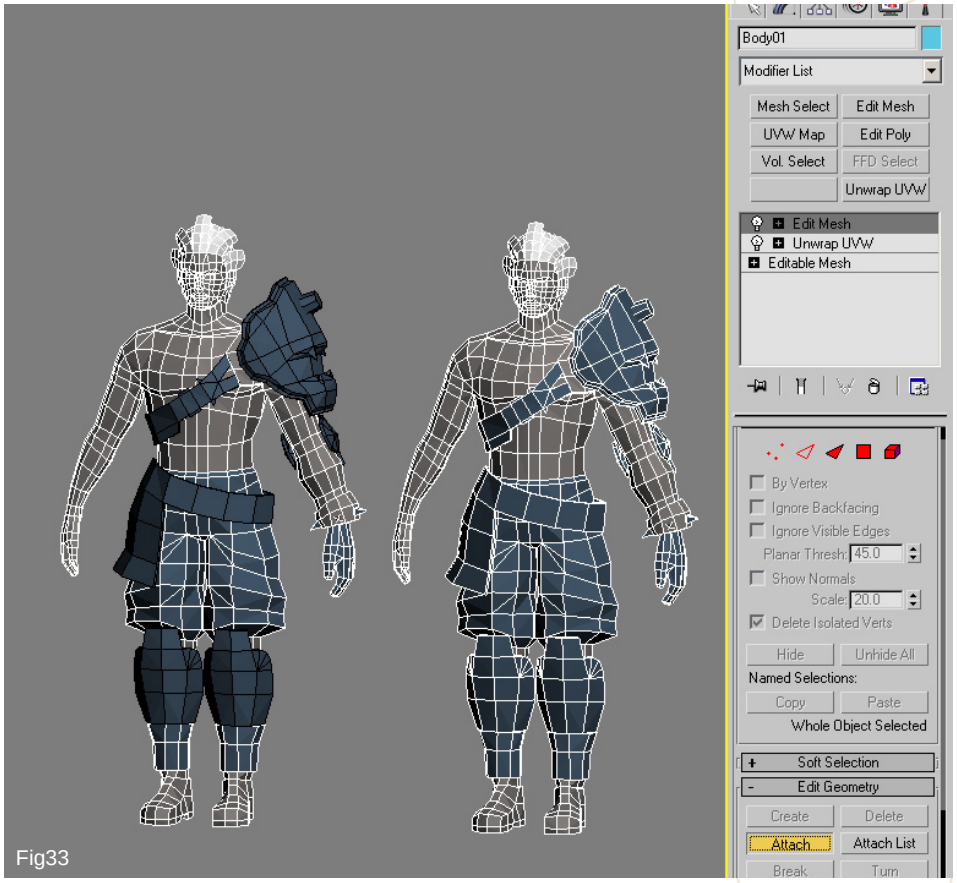


Fig33

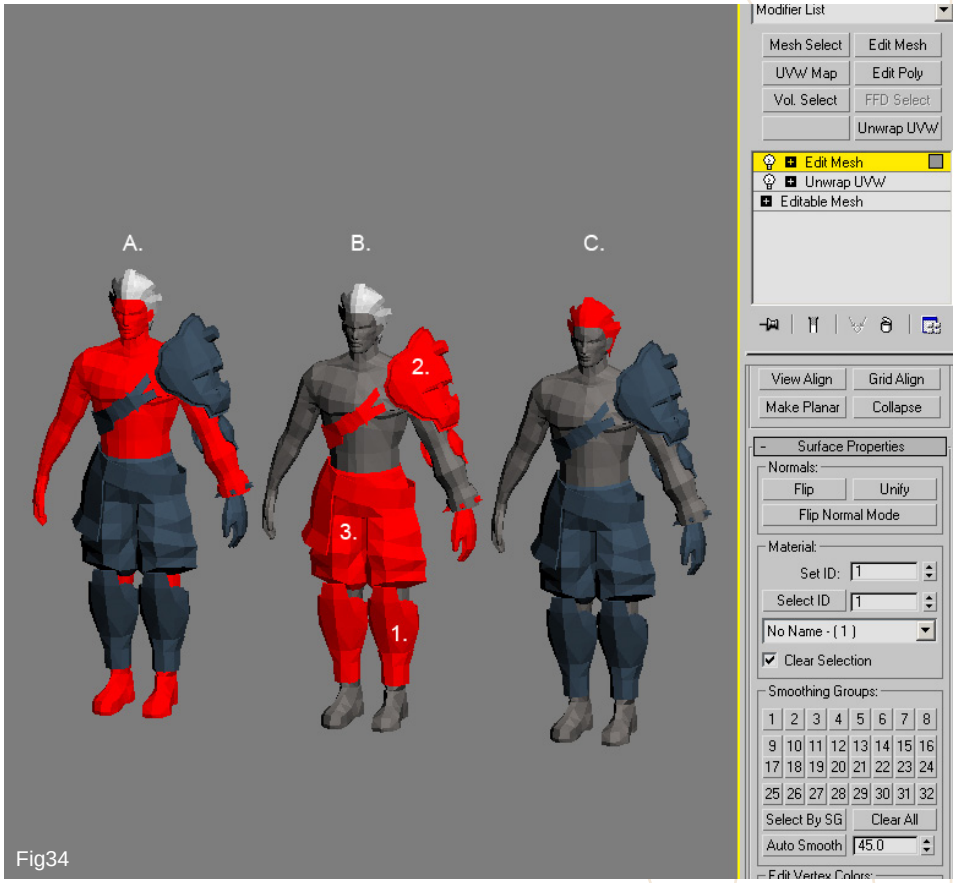
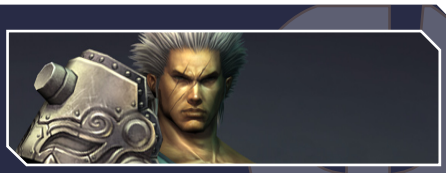


Fig34

34. In Fig 34 you can see that the three



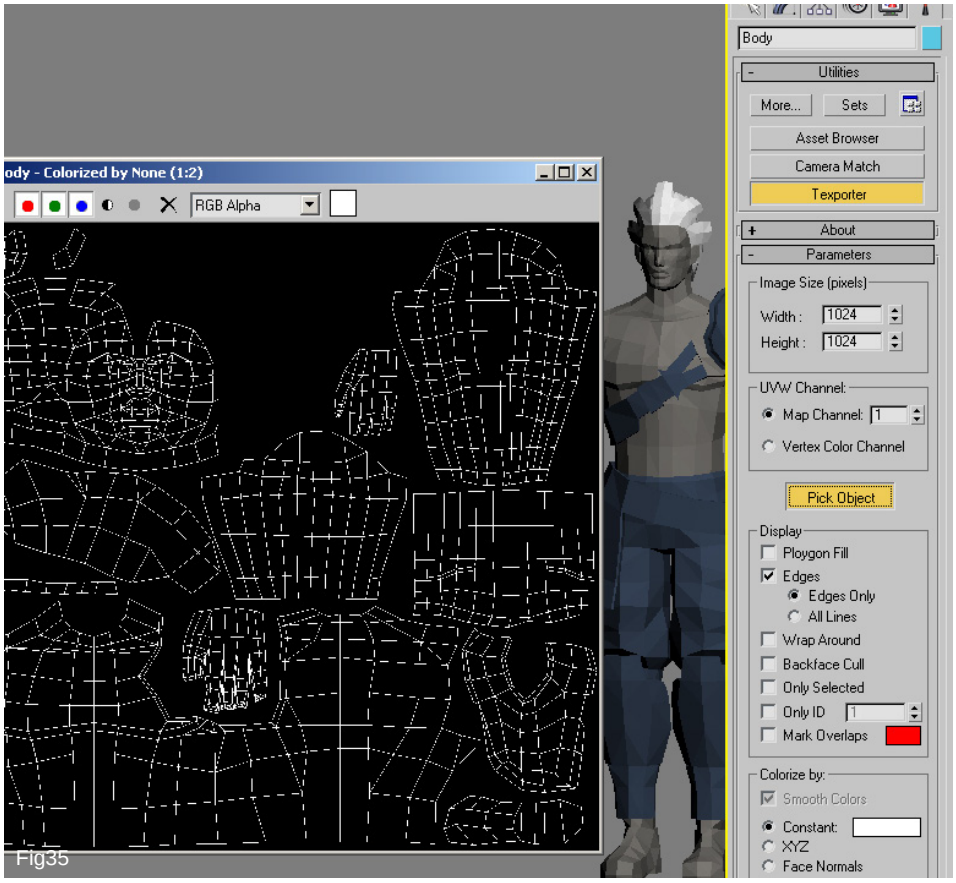


Fig35

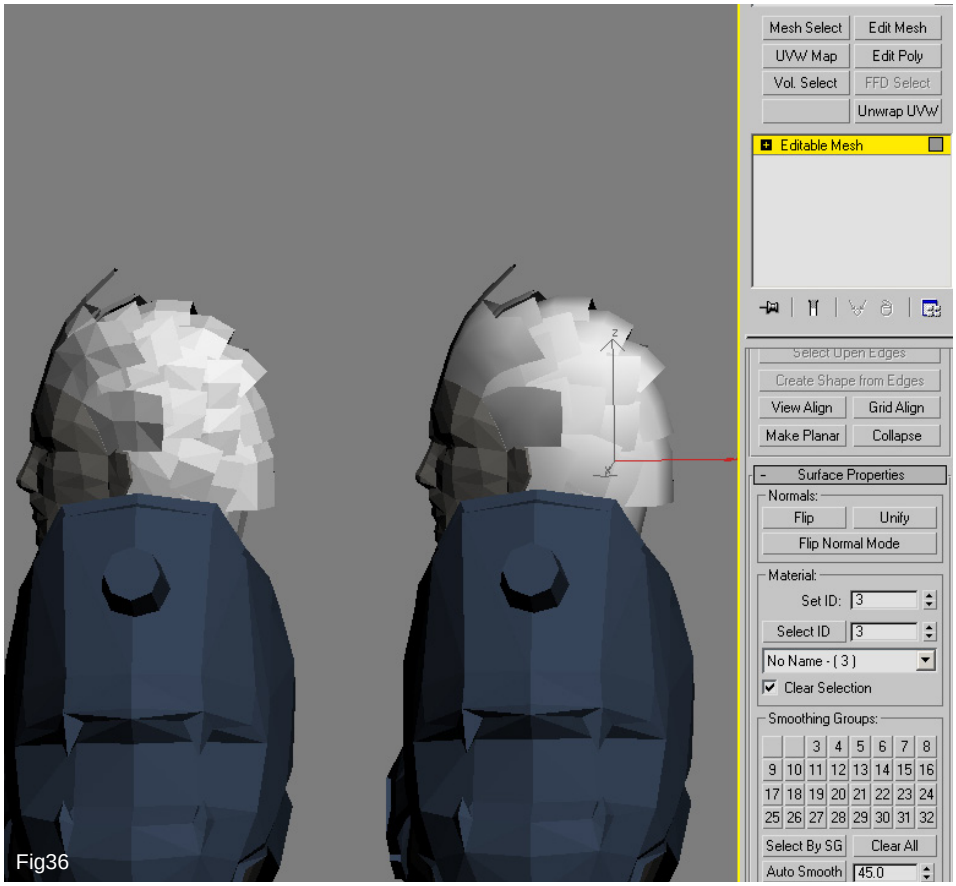


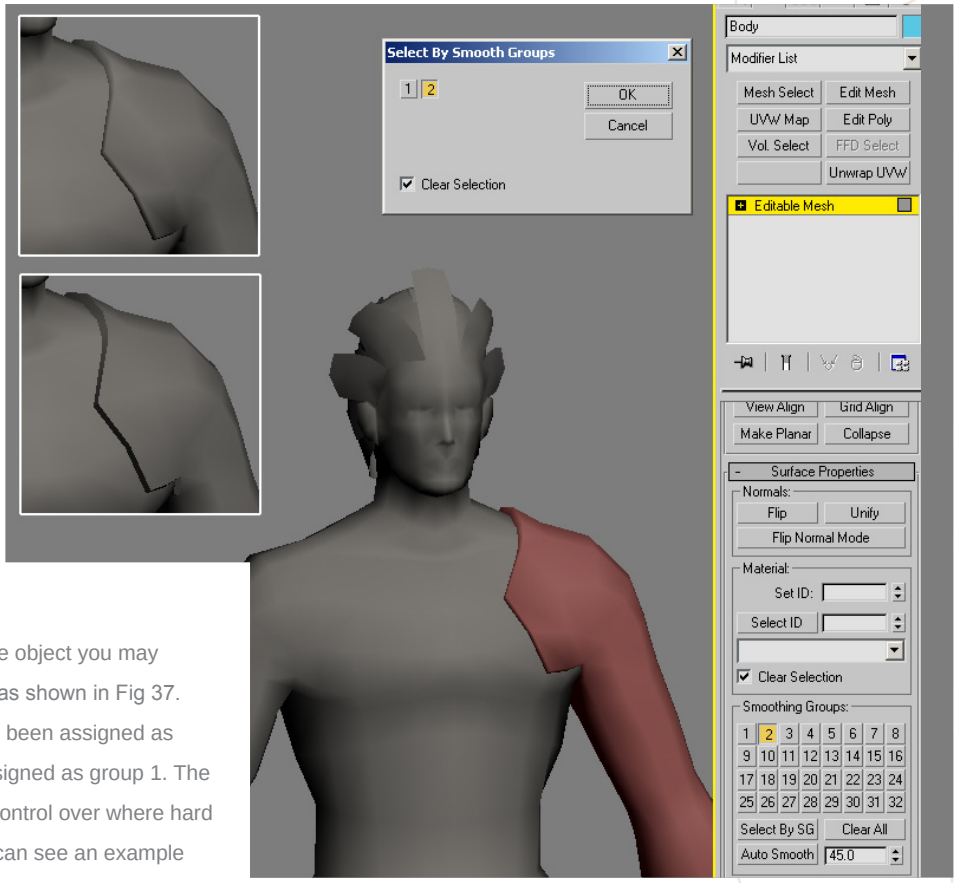
Fig36

characters show the three ID groups : A. body B. Armour and C hair. You should endeavour to keep the elements intact but can combine them in any way you see fit. For example you could place the body poly's in A with the hair in C as well as shoulder piece 2 in B. Once you have arranged all of the geometry into two separate unwraps you are ready to export them both.

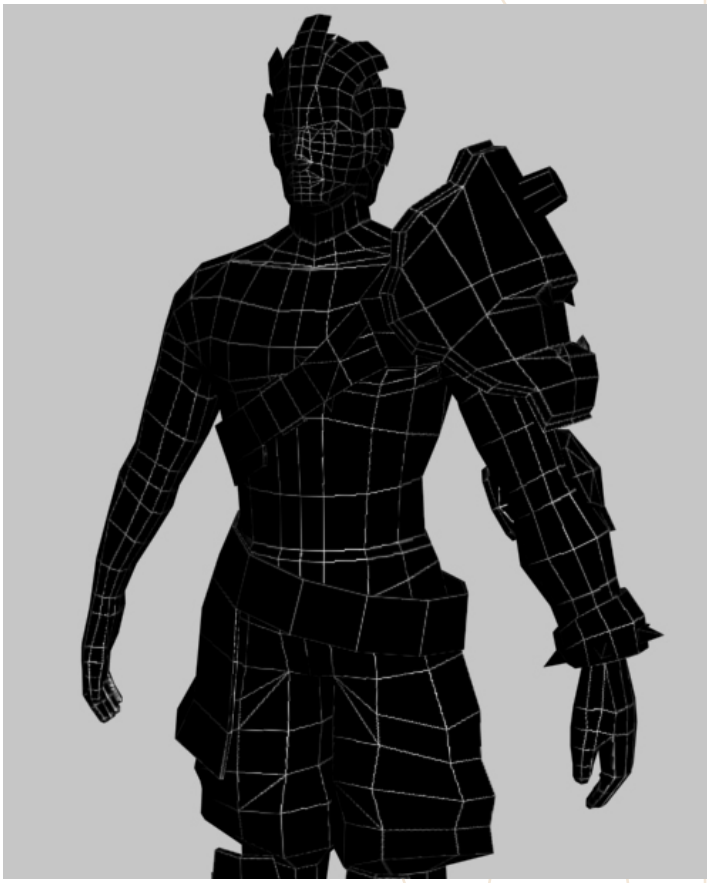
35. In order to get the wireframe templates that will act as your guide you need to install Texporter – a free plugin available to Max. Once installed click on the Utilities tab on the Modify toolbar and select it from the list under the More tab. You will be faced with a set of options similar to those seen on the right in Fig 35. At the top you can specify the size of the Image which in this case will be 1024x1024 as shown. Under Display make sure to uncheck all the tickboxes except Edges. If the model were a single mesh and the poly's were divided into two ID groups then you could tick the Only ID box and enter the relevant number next to it but in this instance we have two separate meshes that represent our two templates so this is irrelevant. IN the Colourize section below choose Constant and set the colour to white. Now click on the Pick Object tab seen in yellow and select the mesh. You will now see a window appear which mimics our UVW co-ordinates. Save this image by clicking on the Save Bitmap icon on the toolbar and then repeat this procedure for the second mesh.

36. You should now have two templates that between them represent the entire character. Before we begin texturing there is one final thing to do. You will have noticed throughout the tutorials so far that the geometry has looked very angular with numerous hard edges. We are now going to iron out the creases by applying smoothing to various polygons which will help disguise the limited amount of geometry important when modelling for games. Having a hard edge is important in some areas and

deciding where these boundaries will lie is a determining factor when assigning smoothing. The way to go about this is to first select a number of poly's in sub-object mode and then scroll down to the Surface Properties – Smoothing Groups section and click on the Auto Smooth tab which is set at a default of 45 degrees. You can see in Fig 36 that the hair has been selected and the difference this has made on the right hand character – much softer ! If your character is made up of separate meshes then you can go through each piece individually and follow this procedure. If some of the angles or edges remain sharp simply increase the angle and try again until you are satisfied.



37. When you wish to retain a hard edge on a single object you may find it is best to assign separate smoothing groups as shown in Fig 37. The poly's that make up the arm shown in red have been assigned as group 2 where as the rest of the body has been assigned as group 1. The advantage of doing this is that you will have more control over where hard edges remain. In the lower inset in the top left you can see an example of an Auto smooth applied to both the arm and body together and the remaining two edges that look sharper than the rest. In the picture above the arm has been assigned a separate smoothing group whereby the angle can be modified until the upper edge is also smooth. The problem with not assigning separate groups is that in order to soften any unwanted sharp edges you may end up over compensating on the rest of the model and giving it the appearance of a clay maquette that has been placed under running water. This technique preserves hard edges where you require them but also allows different settings for selection groups giving the user more control.



38. When you have been through the entire model and completed this task all you need to do now is load the two wireframe templates onto the mesh ready to begin texturing. You should now see a black character overlayed with a wireframe guide as seen in Fig 38. This concludes the mapping stage of the tutorial – phew ! It has been a lengthy and detailed section even though I have not covered everything. I hope you have managed to follow every step without too many problems. Next month we will begin the last phase of the tutorial – texturing.

RICHARD TILBURY rich@3dtotal.com

The 'Swordmaster' character was originally created by



The Swordmaster

Is our new precise, step by step tutorial for highly polished, low polygon game character with detailed texturing for real-time rendering. We have had the tutorial created for the 5 major 3d applications, but even if you are not a user of one of them, the principles should be easily followed in nearly all other 3d applications. Over the next 8 months we will outline in detail the process for creating the 'Swordmaster' you see on the left. The schedule for the different parts of the tutorial is as follows:

Issue 009 May 06

Modeling the Head

Issue 010 June 06

Modeling the Torso

Issue 011 July 06

Modeling the Arms & Legs

Issue 012 August 06

Modeling the Clothing & Hair

Issue 013 September 06

Modeling the Armour

Issue 014 October 06

Mapping & Unwrapping

Issue 015 November 06

Texturing the Skin & Body

Issue 016 December 06

Texturing the Armour & Clothing

Enjoy ...

Part 6
Mapping and Unwrapping.

Introduction:

Welcome to the sixth instalment in the series which will provide a look at mapping and Unwrapping our finished mesh. This is quite an involved process and will be covered in only one tutorial. In order to keep this from becoming too long I have not detailed every step along the way but rather opted to provide an overview of the principal techniques used. This should hopefully equip any beginners with enough information to tackle the entire model and complete it on their own. The crucial methods necessary will be covered and then can be repeated to map sections that have been omitted. The important thing to remember is that the tutorial has been filtered to contain only the key procedures.

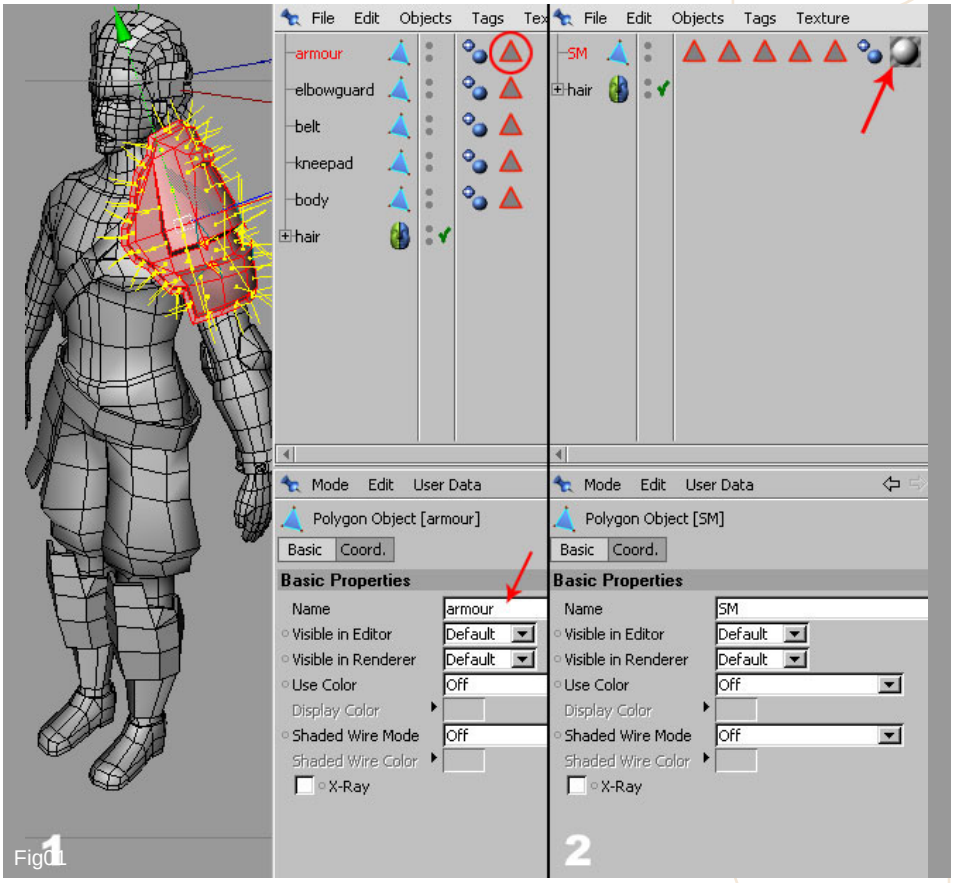


Fig01

1. First step is to connect the various objects that compose our model. Before doing it we need to save the selections of those objects in order to facilitate the work in the unwrapping section. Select the armour on the shoulders, select all poly's and then from main menu choose Selection > Set Selection. A tag will appear near the object, give it a name. Same procedure for the others objects but exclude for the moment the hair by leaving it as a separate object (Fig01 - step 1). Connect now the objects. Go now in the Material Manager and create a new material (File > New Material). Select the object then select the material > right mouse > Apply (Fig01 - step 2).

2. In order to check the integrity of our mapping co-ordinates and enable us to successfully unwrap our mesh we will need to apply as texture to our geometry to act as a guide – in this case a checker map. The idea here is that

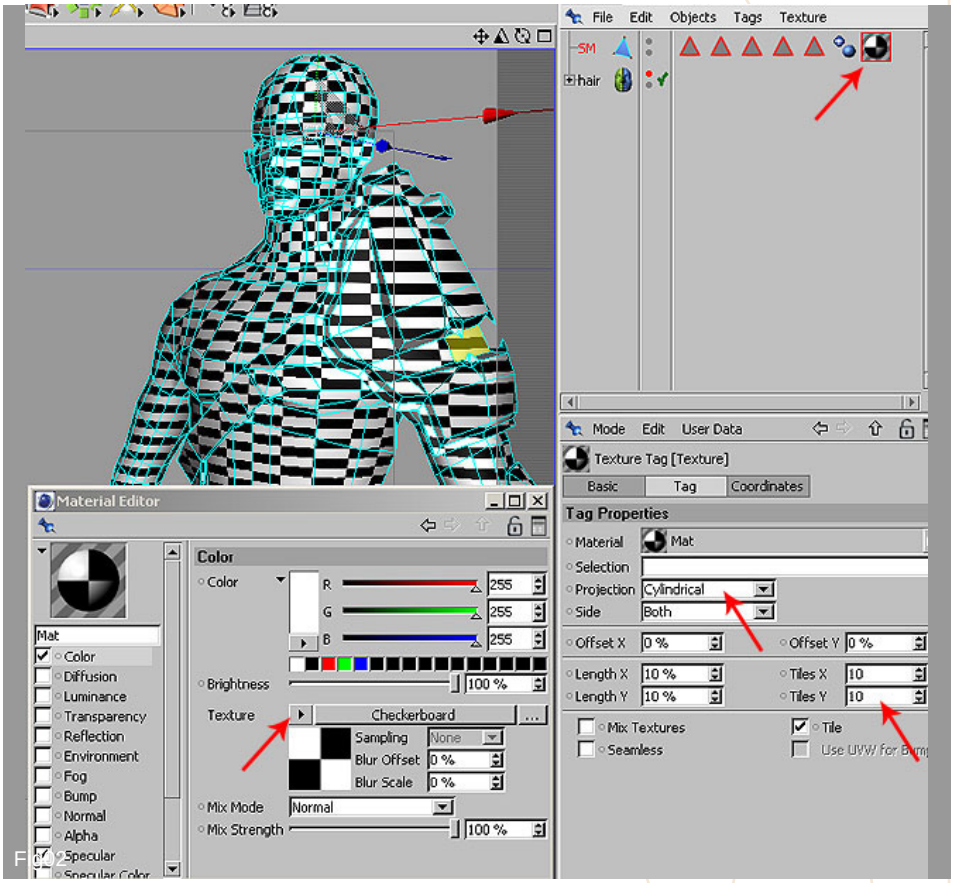
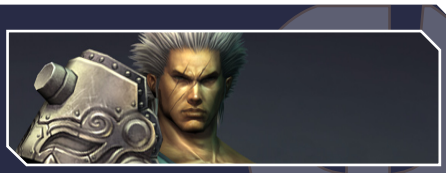


Fig02



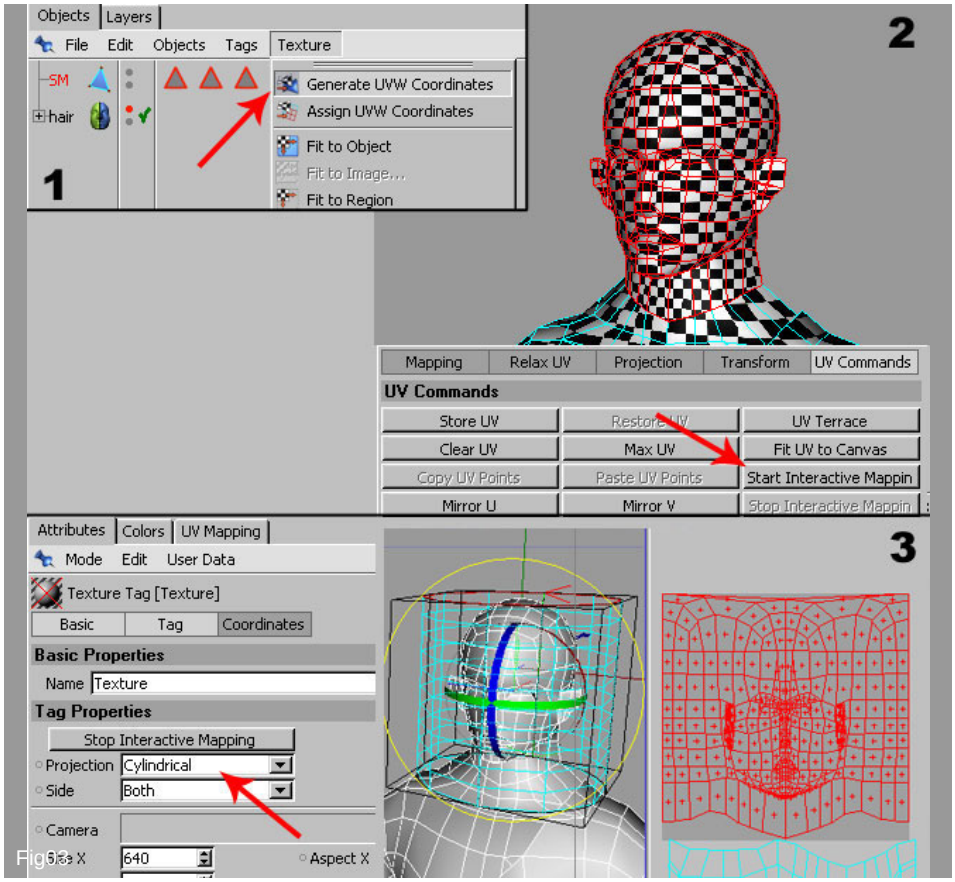


Fig02

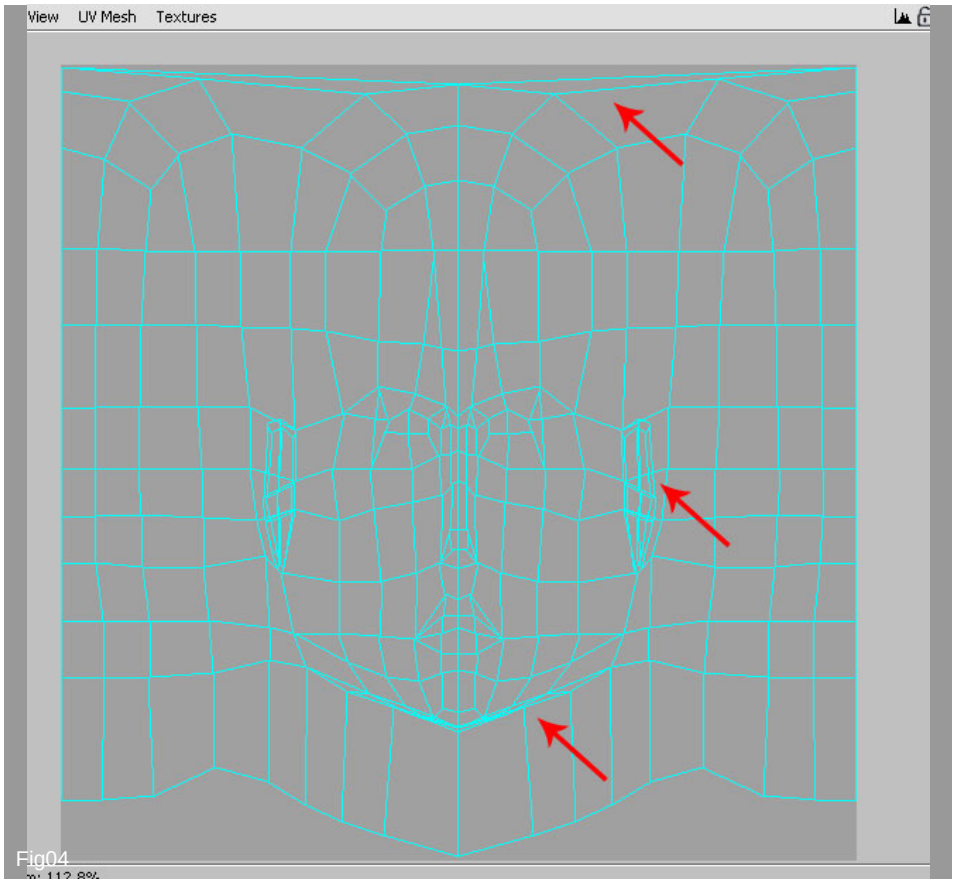


Fig04

the squares are a consistent size and so will easily show any stretching and badly mapped polygons. To load the map open the Material Editor (by double click on the material) and then click on the small button next to the Texture text (highlighted by red arrow in Fig02 - left). This will bring up the menu where you need to select Surface > Checkerboard. The map should appear on the model. Select now the texture tag into Object Manager and choose the Cylindrical projection in its Properties as seen on the bottom right of figure. Change also the Tiles repetition so bring it to 10. You will now see a very messy checker map across your character which will require mapping. The checkermap will eventually be substituted by our painted template and the idea is that if the squares appear correctly so then will the finished texture.

3. To correct this we will use the Interactive Mapping that is a procedure to unwrap the mesh by applying different projections on any parts of the object. Switch your interface from Standard to the BP UV Edit and here start the procedure from the head. First select the texture tag and from the object manager menu choose Texture > Generate UVW Coordinates (step 1 - Fig03). The mesh now is editable. Select all the poly's that make up the head and neck area as seen in step 2 - Fig 03. Then in UV Commands click on Start Interactive Mapping button. Choose the Cylindrical projection like shown in the step 3 of figure then click on Stop Interactive Mapping to stop the procedure.

4. Next step involves in modifying the mesh of the head to make it more regular avoiding so the stretching. How you can see from Fig04 we need to adjust some parts of the head (indicated by red arrow) where the checkerboard is distorted.

5. Using the transform tools we can alter the mapping co-ordinates in this window which will directly affect the texture. On the right of Fig05 you will notice a vert highlighted in red which has been moved out of alignment with its edge and as a consequence the checker map has been stretched in the corresponding position on the mesh, encircled in red (left of figure). The basic premise of this part of the process is to use the tools available to accurately mirror the checker map across the surface of our geometry. Start by using the scale tool (UV Non-uniform Scale Tool) to make the checkers appear square and then concentrate on details where stretching occurs.

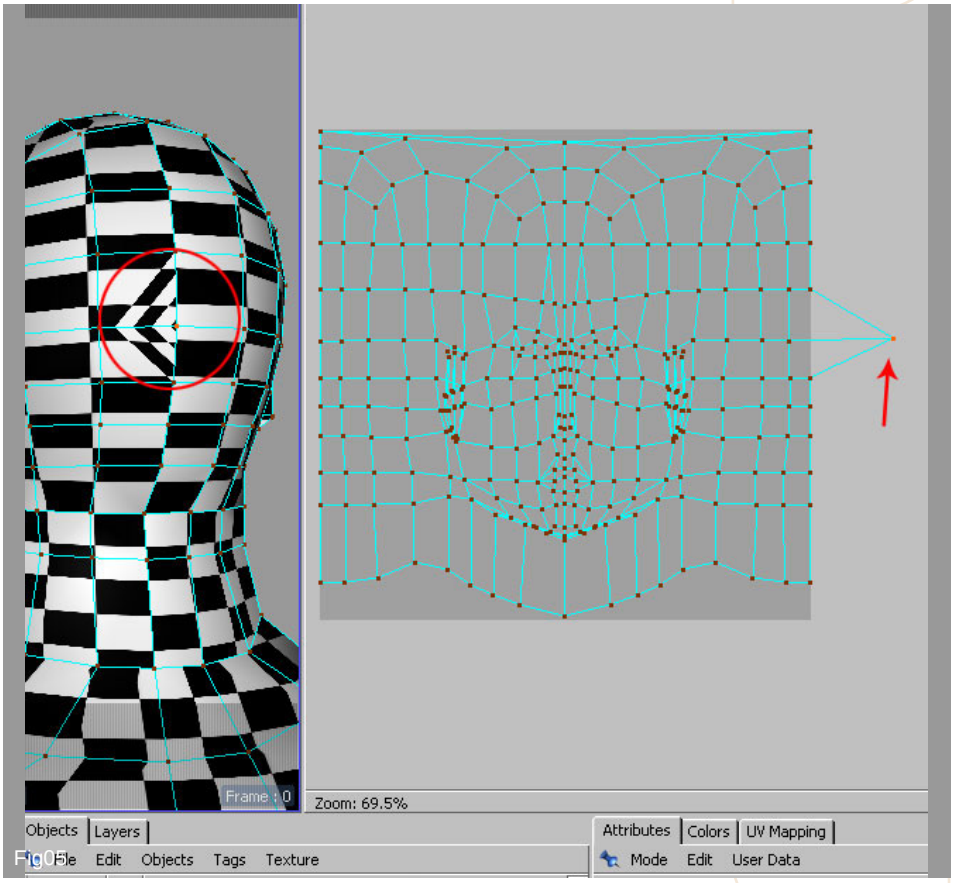


Fig05

6. Next step is to divide the mesh to half and then overlap the two parts. So select the mesh like shown in Fig06 at the stage 1 then use the Mirror U tool to flip the selected faces (stage 2). Now use the Move tool to overlap the two parts as seen in stage 3 of figure. How you can see in the bottom right of figure I have enabled the snapping to the point and to the edge in order to obtain a perfect overlap. The procedure we just made will facilitate the adjustment of the various parts that we are going to adjust.

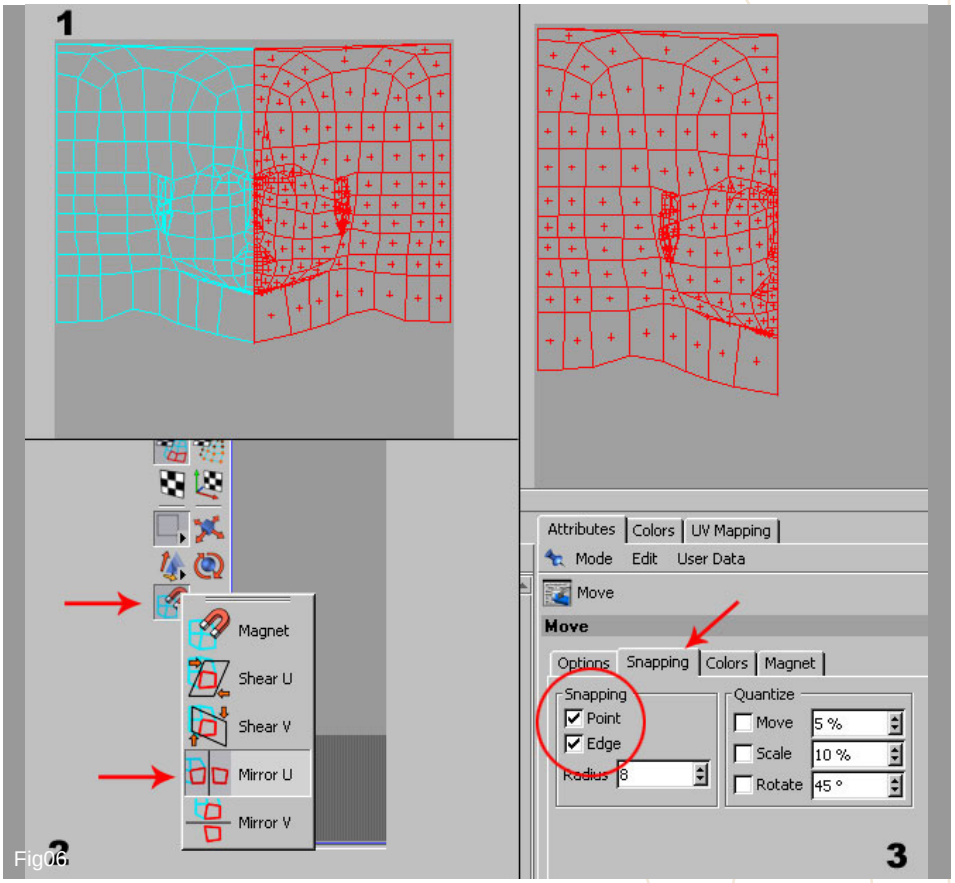
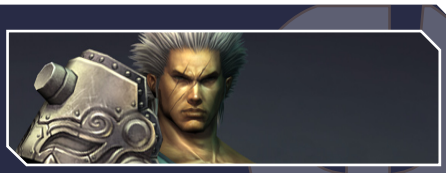


Fig06



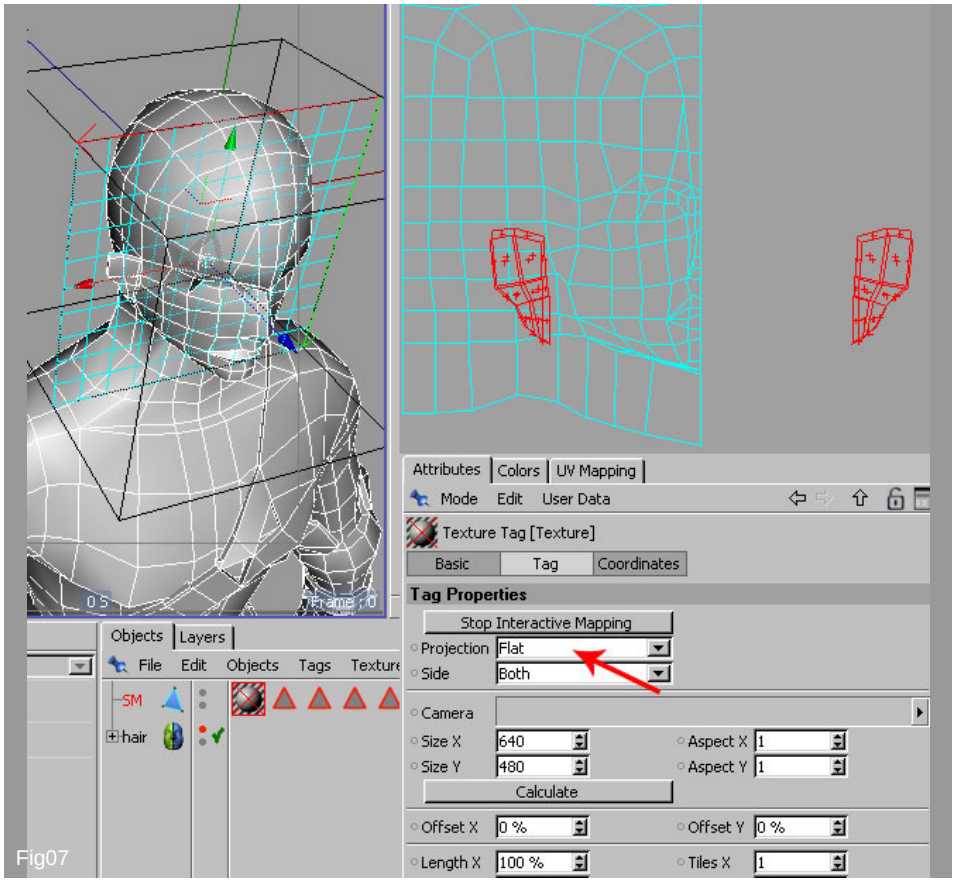


Fig07

7. Now we can map the ears. Select so the ears (from 3d view) and apply the Interactive Mapping. Choose the Flat projection and use the Texture Axis tool to rotate the gizmo and position it as seen in Fig07 (left). Stop the interactive map.

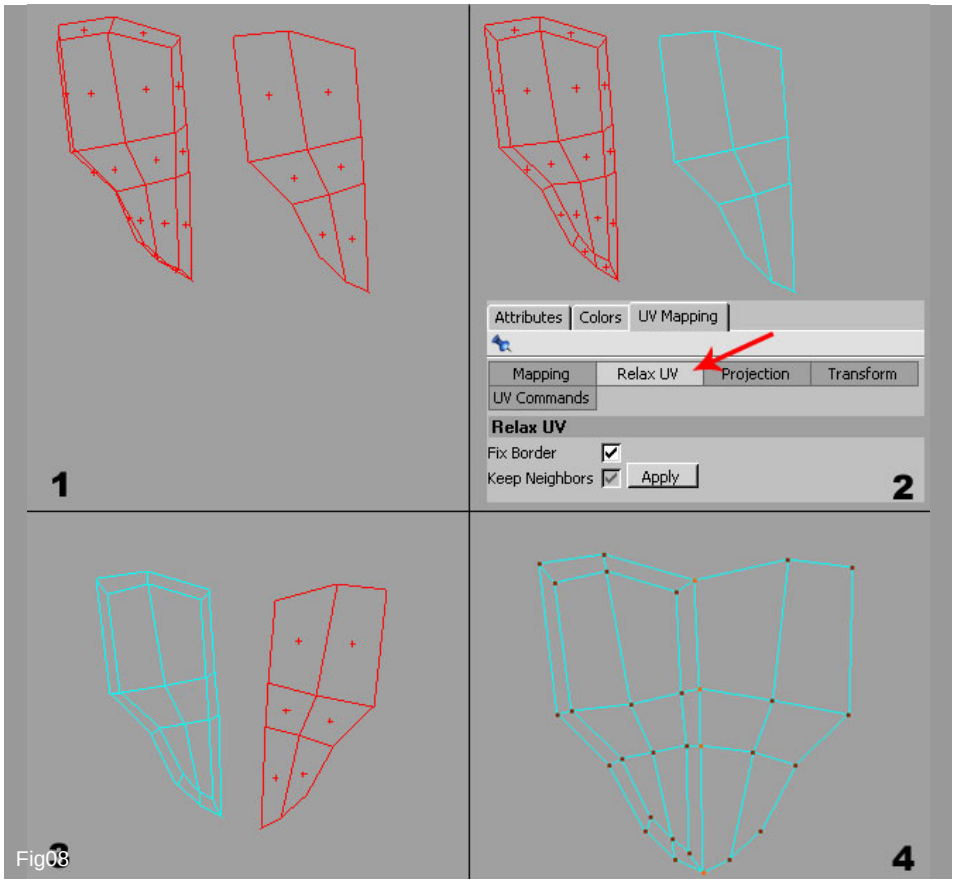
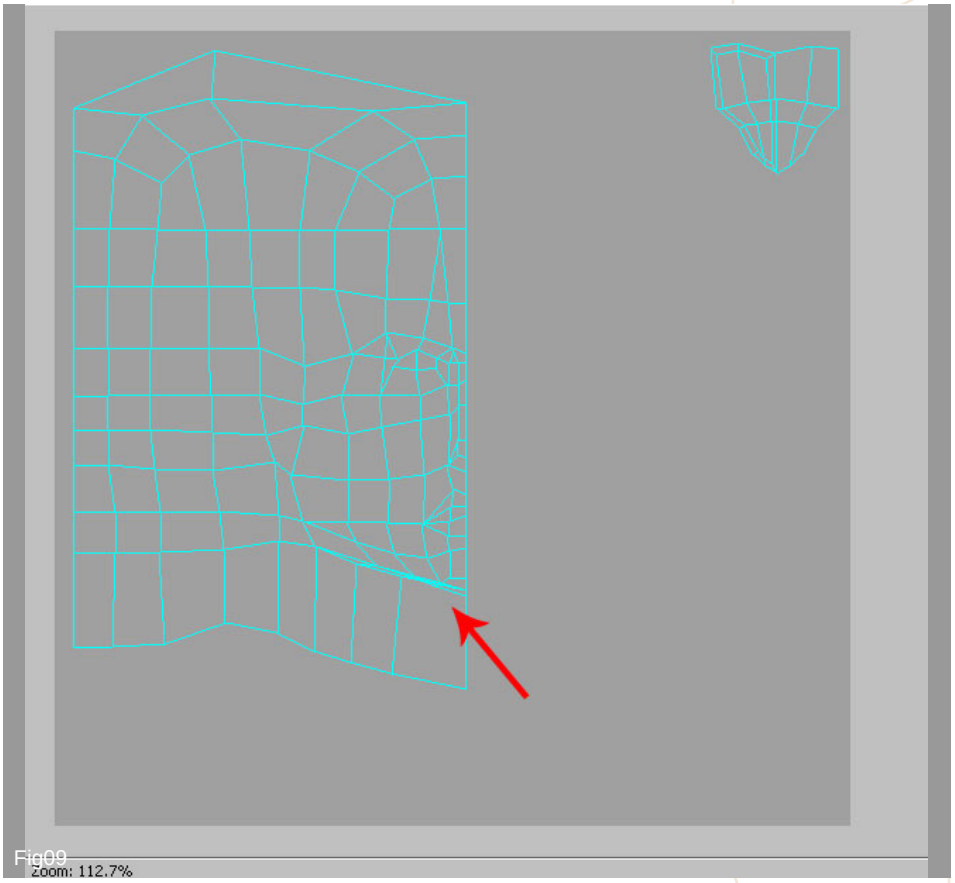


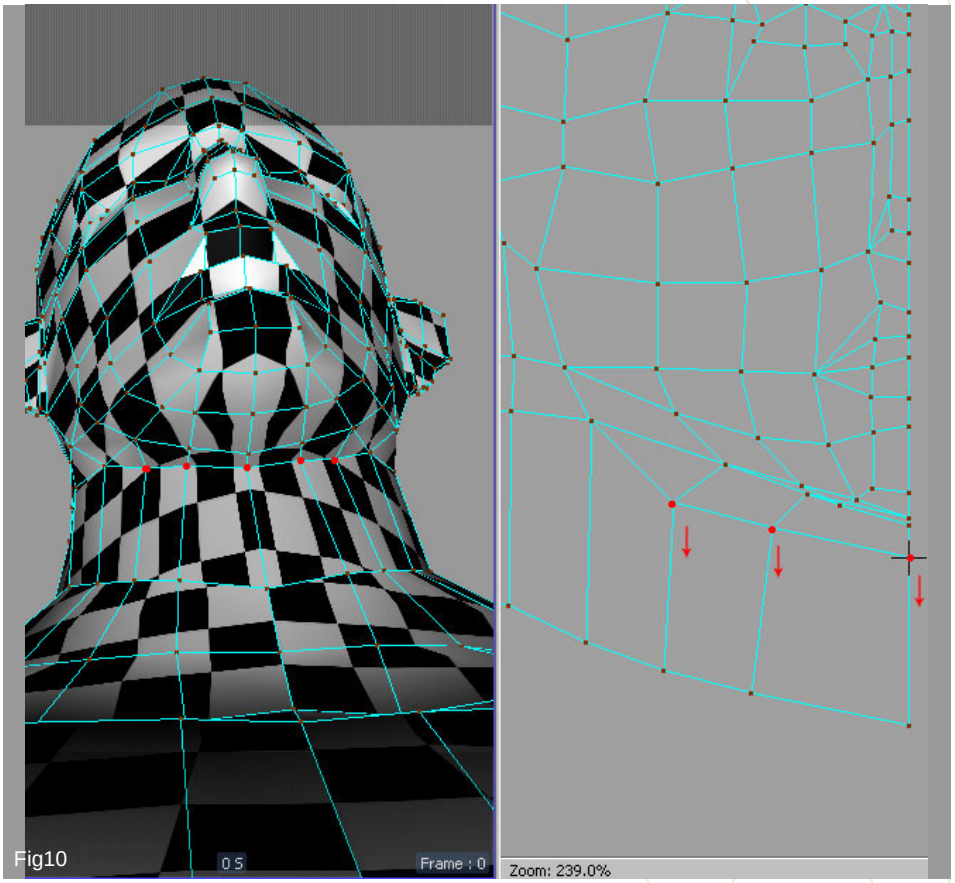
Fig08

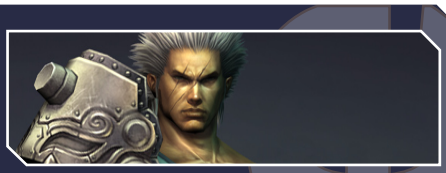
8. Overlap now the ears as we did for the head. Still working on the ears, select now the back faces and detach them by using move tool as seen on the stage 1 of Fig08. Select the frontal faces of the ears and apply Relax UV (or move manually the points in order to avoid the overlaps of the mesh) like shown at the stage 2. Select now the back faces and use the Mirror U tool (stage 3). Attach the two parts by moving and snapping the central points as seen at stage 4 of figure. If it's necessary scale the mesh of the ears to keep the squares a similar size to those of the head.

9. We shall now go on fix the neck area, in fact part of mesh is overlapped as seen in Fig09.



10. Select the points from 3d view like shown in Fig10 and move them down, make sure that the size of the squares is similar to the others.





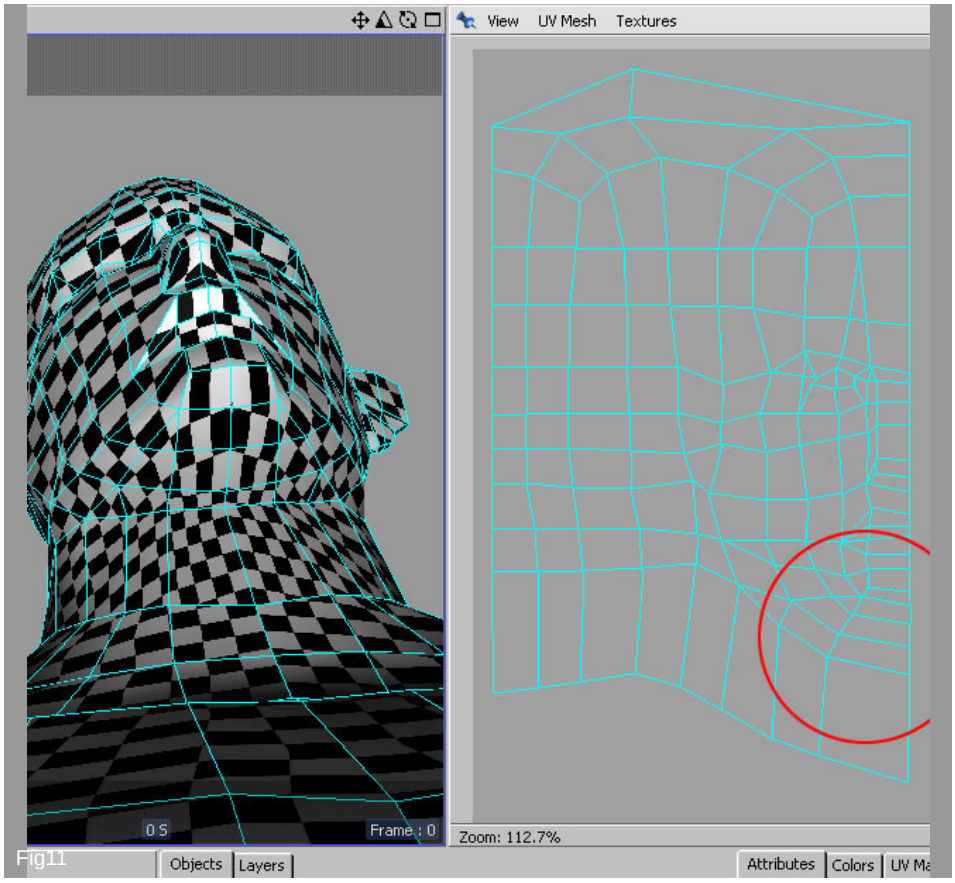


Fig11

11. Repeat this for the other points until you get the mesh like shown in Fig11.

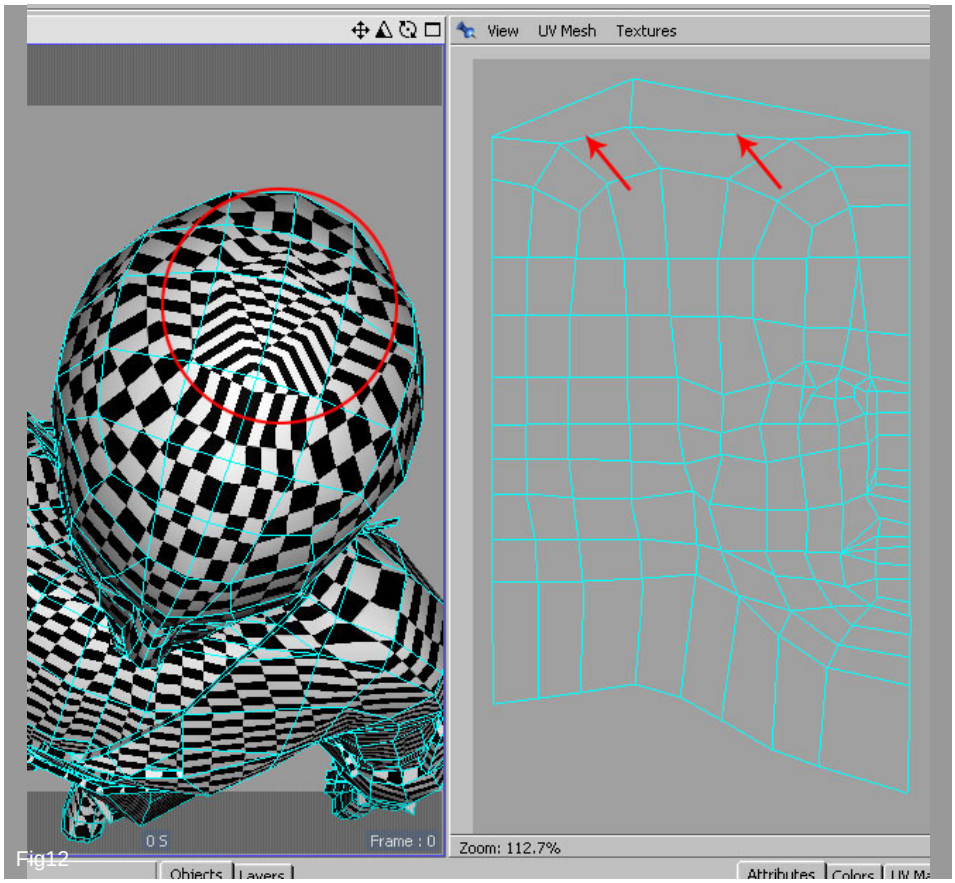


Fig12

12. Last thing to do for the head is to adjust the two poly's on the top. Fig12. Move the verts around along the top edge using the checker map as a guide to improve the distortion across the scalp. Do not worry about it being perfect as there will be some degree of stretching but it will eventually be concealed by the hair anyway.

13. You should aim for something similar to the shape in Fig13.

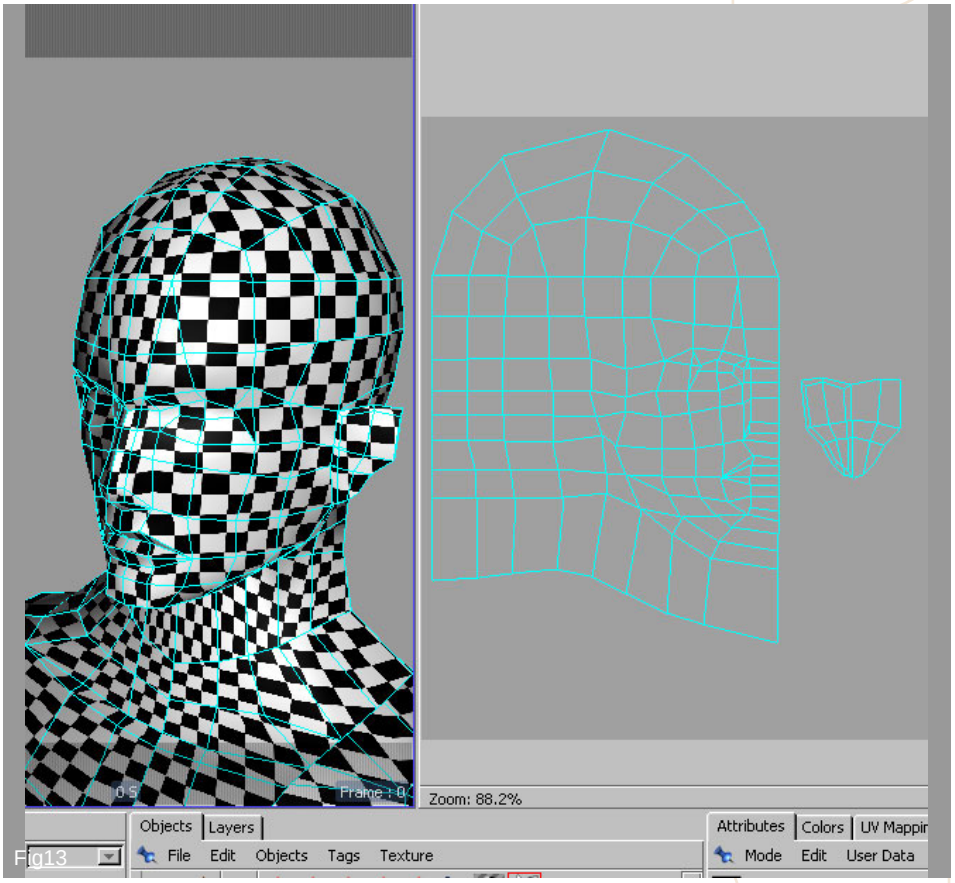


Fig13

14. Still working on the head, select half head (except the ears) and flip it horizontally. Then move it next to one another so the central line of verts overlap down the middle of the face as seen in Fig 14. Select the central verts and weld them by using the Transform tool like shown on the bottom of figure. You should now have a completely mapped head with a seam around the base of the neck and from the top of the forehead to the top of the shoulders.

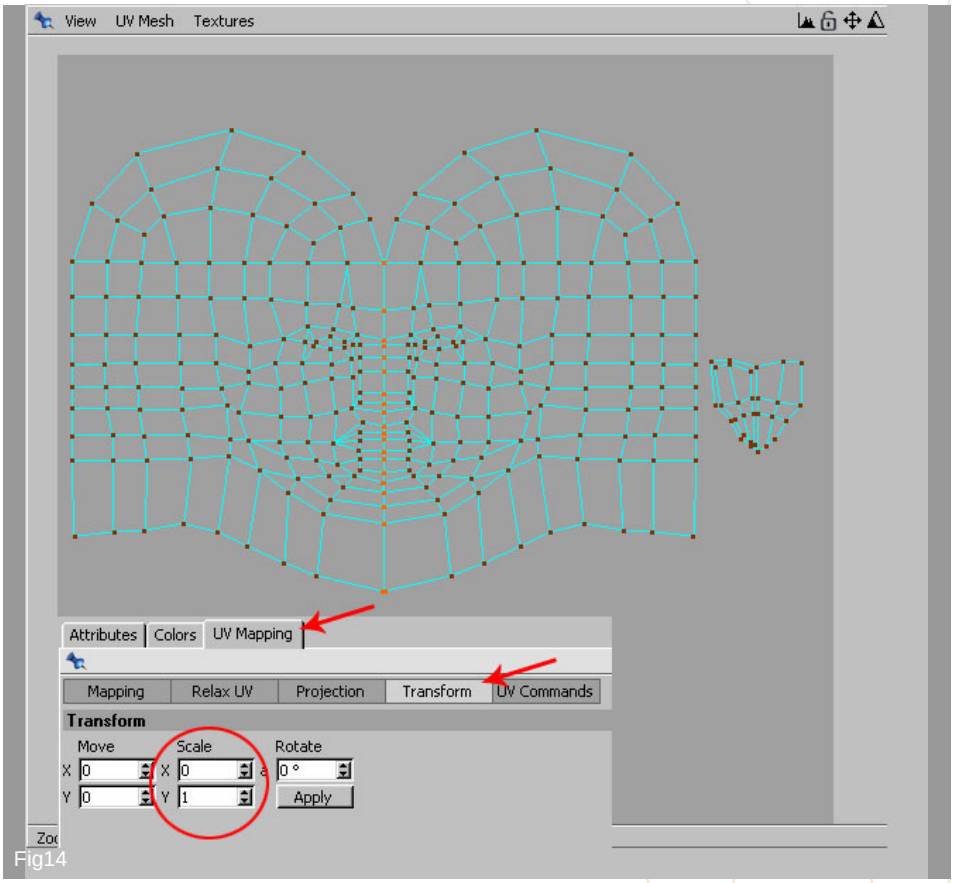
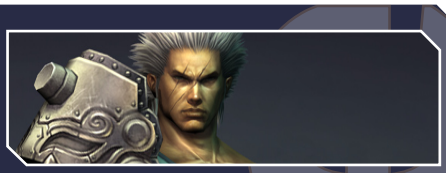


Fig14



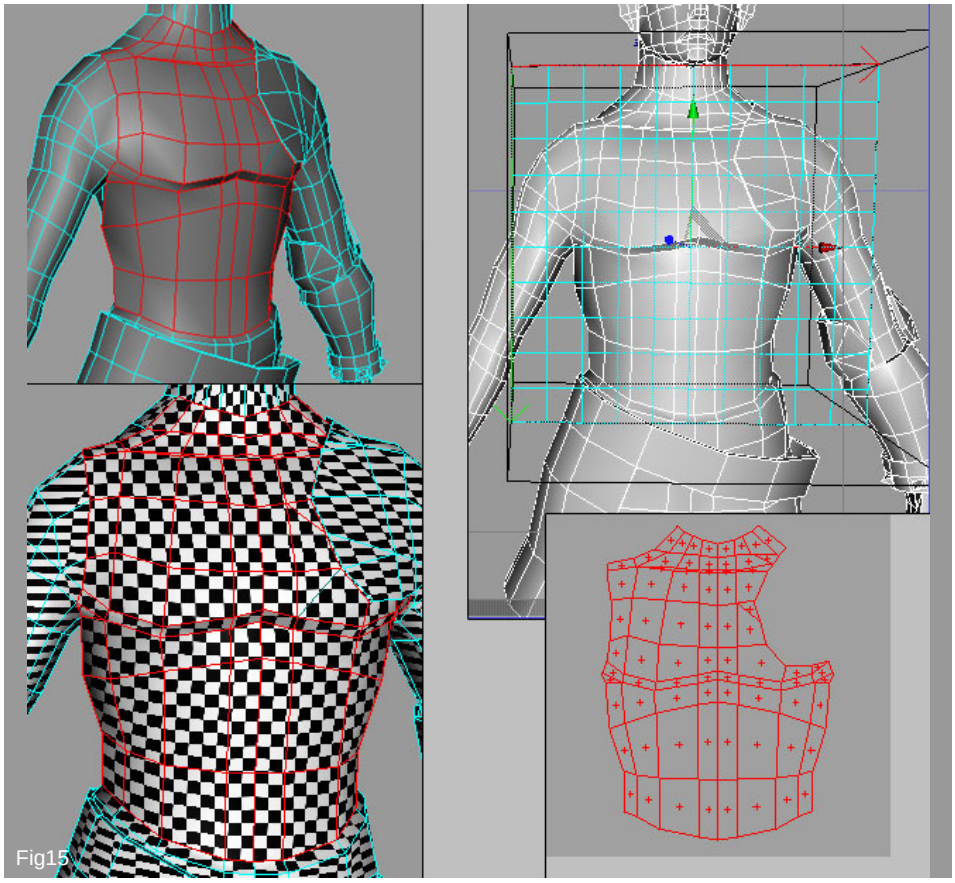


Fig15

15. Now it is time to move onto the torso. First hide the poly's tat make up the belt around the torso then select the front half of the body from the neck line down to the trousers and half way around the side as seen in Fig 15. Apply a Flat map by using Interactive Mapping.

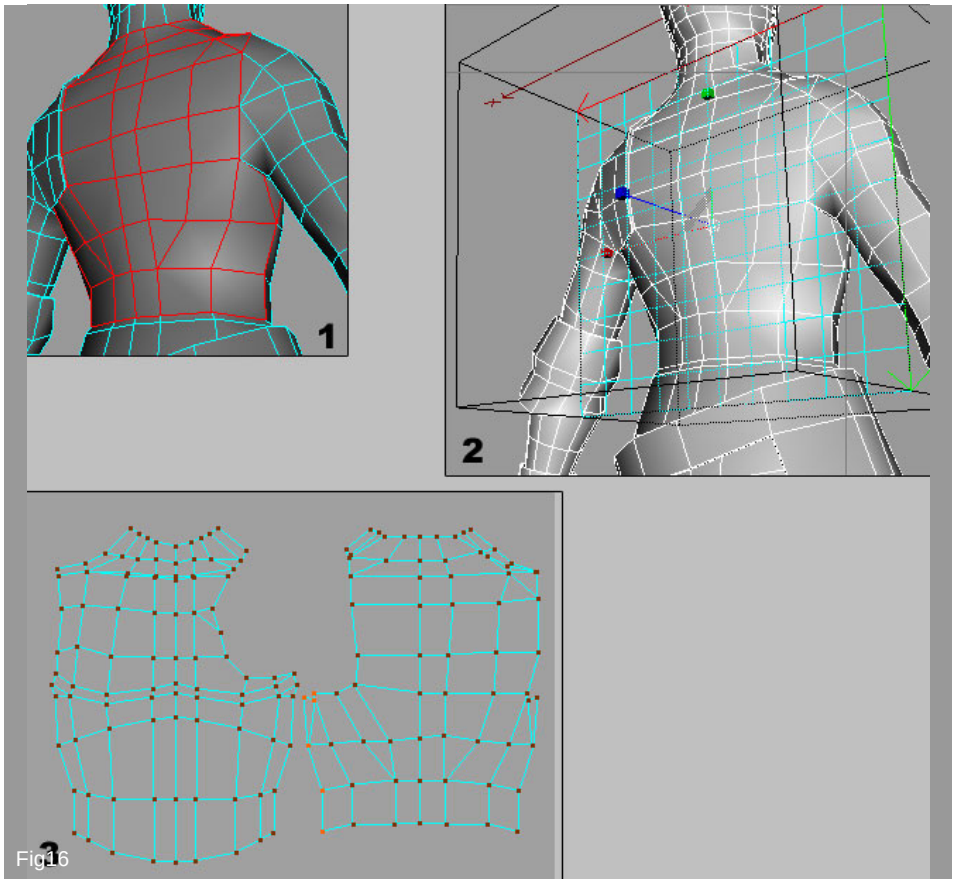


Fig16

16. Follow the same procedure for the back to complete the torso area. Select so the poly's like shown on the stage 1 of Fig16 then apply a Flat map by using the Interactive Mapping command (stage2). Flip the newly mapped poly's (Mirror U tool) horizontally and scale them in order to obtain the similar size to the front of the body (stage 3). Next step is to weld the verts highlighted in red as seen in the stage 3 of figure.

17. In Fig17 you can see that the verts have now been welded and the section scaled to make it more consistent with the head. You will have to re adjust the verts in the Edit window once welded in order to reduce some of the distortion.

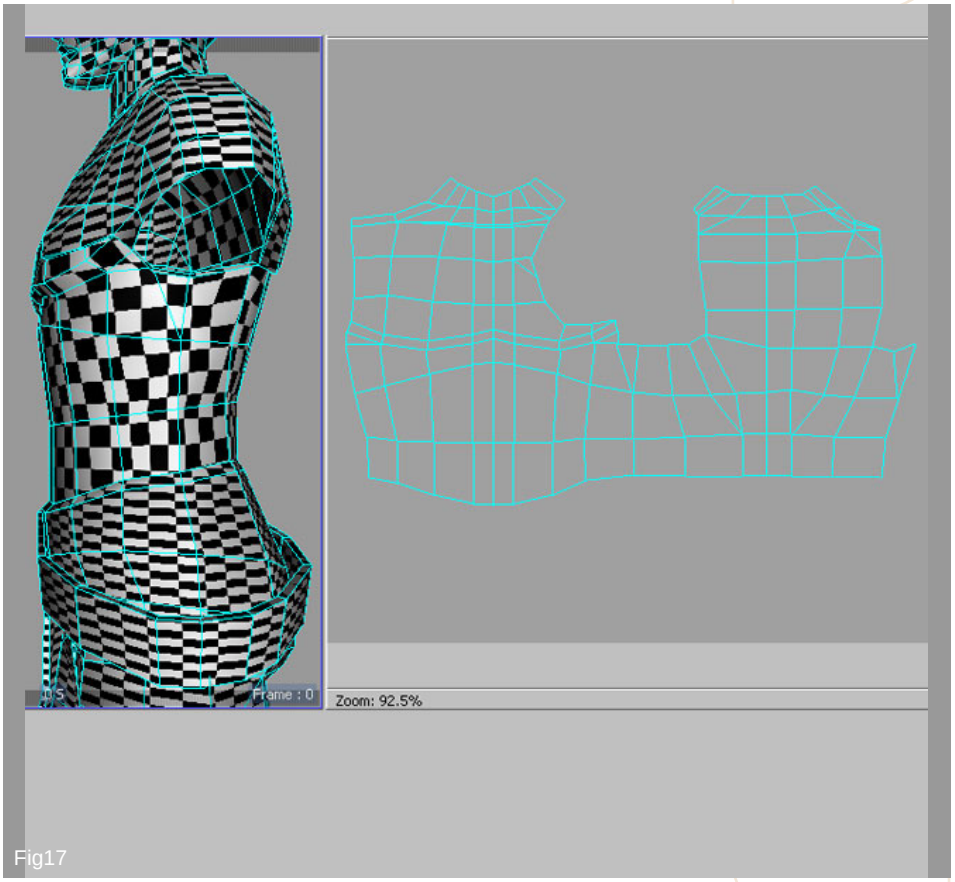


Fig17

18. Now it is time to deal with the limbs. Before starting the procedure of Interactive Mapping we can delete one leg from the waist down (stage 1- Fig18). Any mapped geometry that is duplicated retains its mapping co-ordinates and so to save time we will map just one leg and then we will duplicate it. Hide the kneepad object by double click on Polygon Selection Tag. (Stage 2). Select the all the poly's that make up the trousers and apply a Cylindrical map by using the Interactive Mapping command. (Stage 3). How you can see from figure the mesh has some overlaps that will need to be fixed by moving manually the verts.

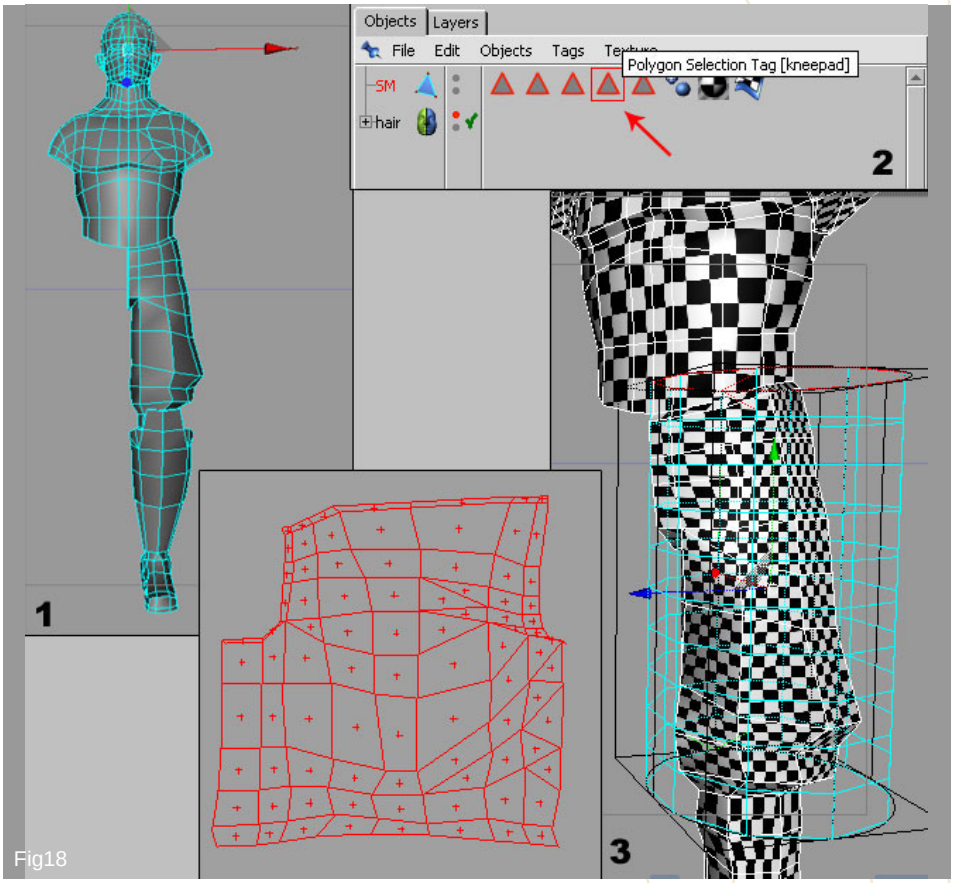
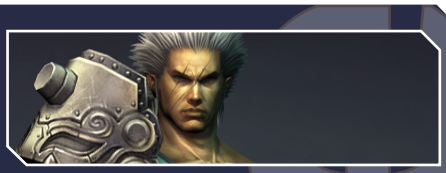
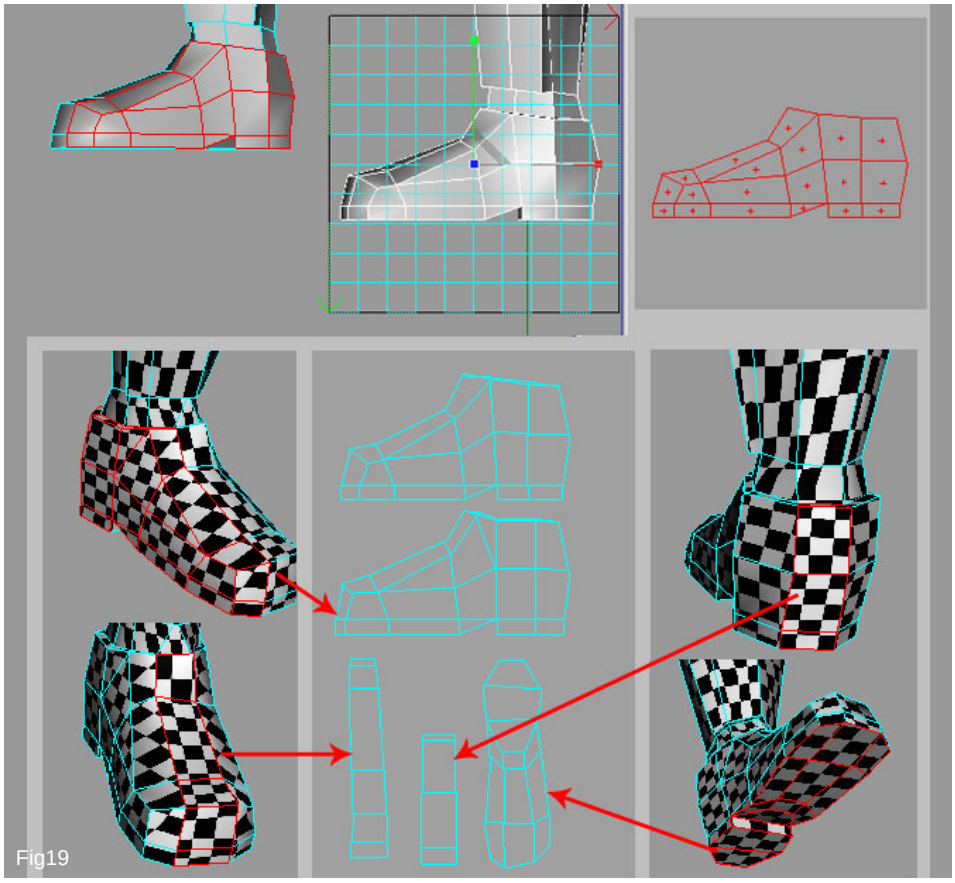
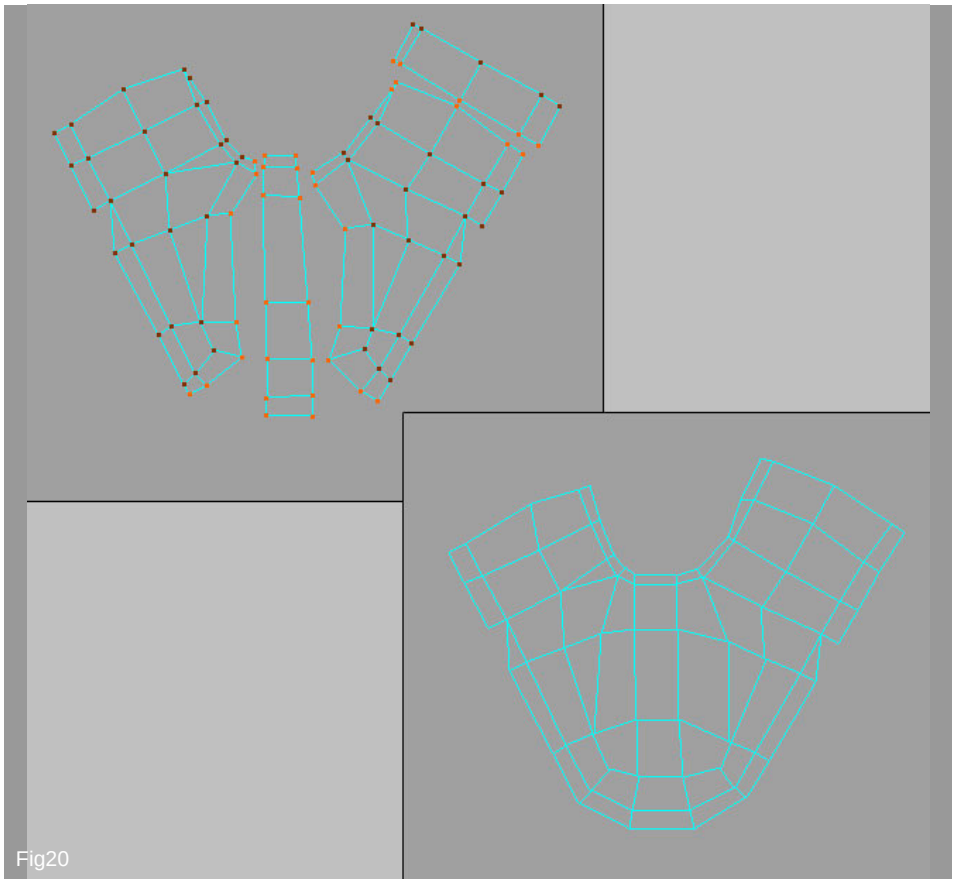


Fig18



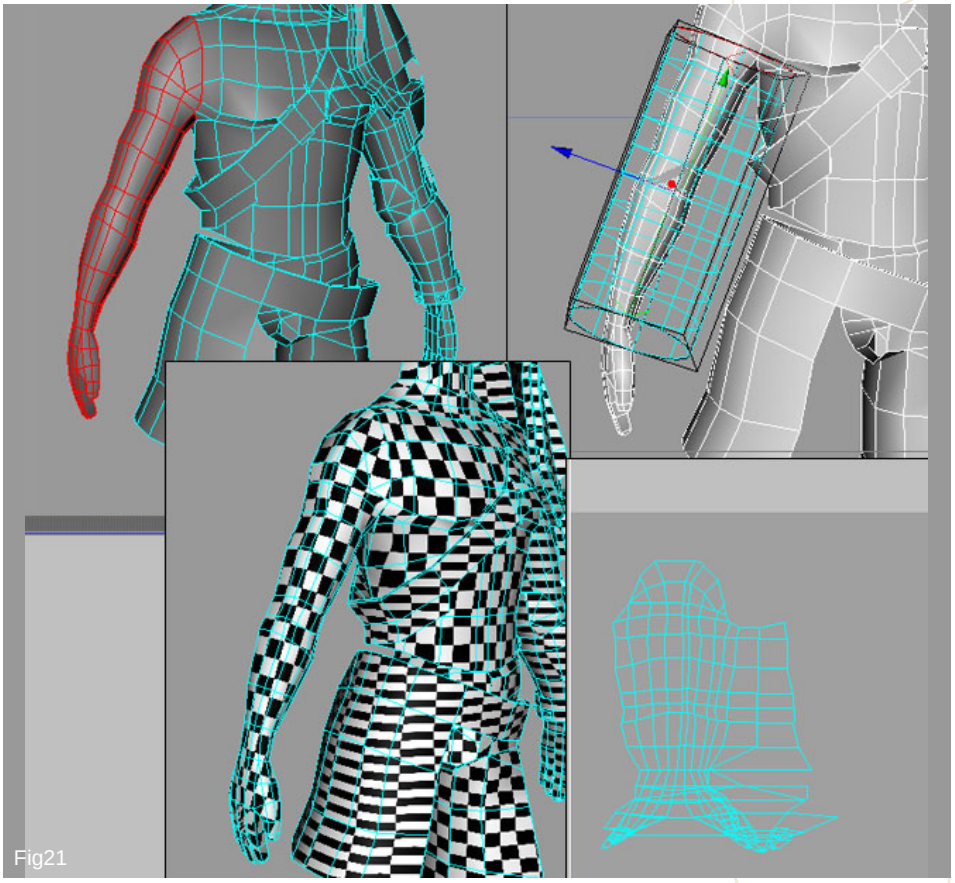


19. Same procedure for the lower leg apply so a cylindrical map then adjust the overlaps by using the move tool or the relax UV tool. With regard to the feet simply apply a Flat map from the left and right sides as seen in the top Fig 19. Same projection for the other parts of the shoe rotating the gizmo each time.



20. When the whole foot have been mapped rotate and move the two sides and the back as seen in Fig 20. Weld the verts highlighted in red and make any adjustment to minimize any obvious distortion.

21. For the arms use the same procedure. In Fig 21 you can see a cylindrical map being applied to the right arm. It runs from a line at the top of the shoulder down to the wrist. You can see that I have rotated the gizmo to follow the orientation of the arm using its local co-ordinates.


Fig21

22. The hand will be mapped with a Flat map as you see in Fig22. In the stage 1 I have selected the palm of the hand and then I applied a Flat projection by using the Interactive Mapping. (2). I also used the Relax UV tool in order to avoid the overlaps and then I have refined the mesh moving the inside vertexes of the fingers (stage 3). Same procedure for the rest of the hand. Select the poly's as seen in the stage 4, apply a Flat map and adjust the mesh (stage 5). Scale the hand in order to obtain the similar size of the squares to the rest of body (stage 6).

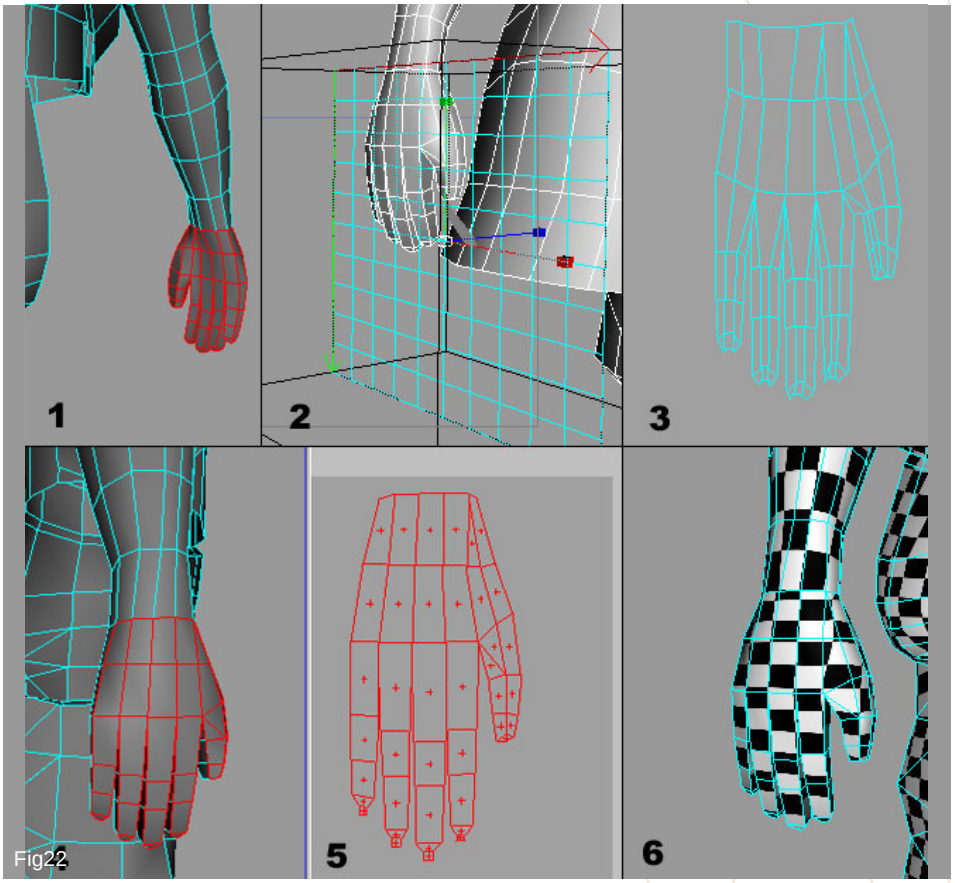
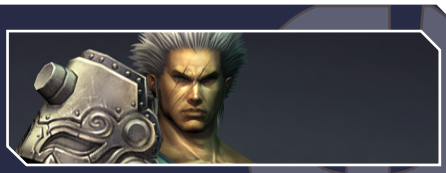


Fig22



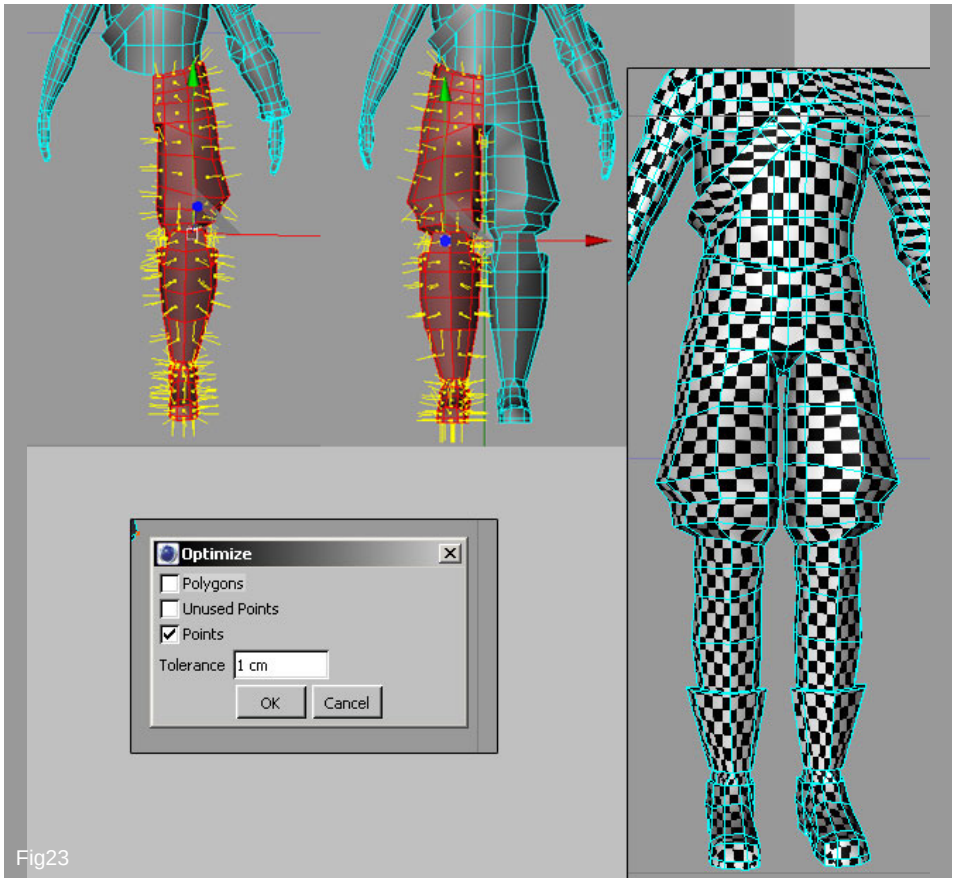


Fig23

23. When the leg is fully unwrapped it is time to copy it over and weld it to the main body. Select so the leg like shown on the top of Fig23 and choose from right mouse menu the Mirror tool. When you choose this tool a line will appear into your view, drag this line over the Y axis. Select then all verts and use the Optimize tool to weld the leg to the body. The hand can also be copied but you may want to map the two arms separately as they are slightly different.

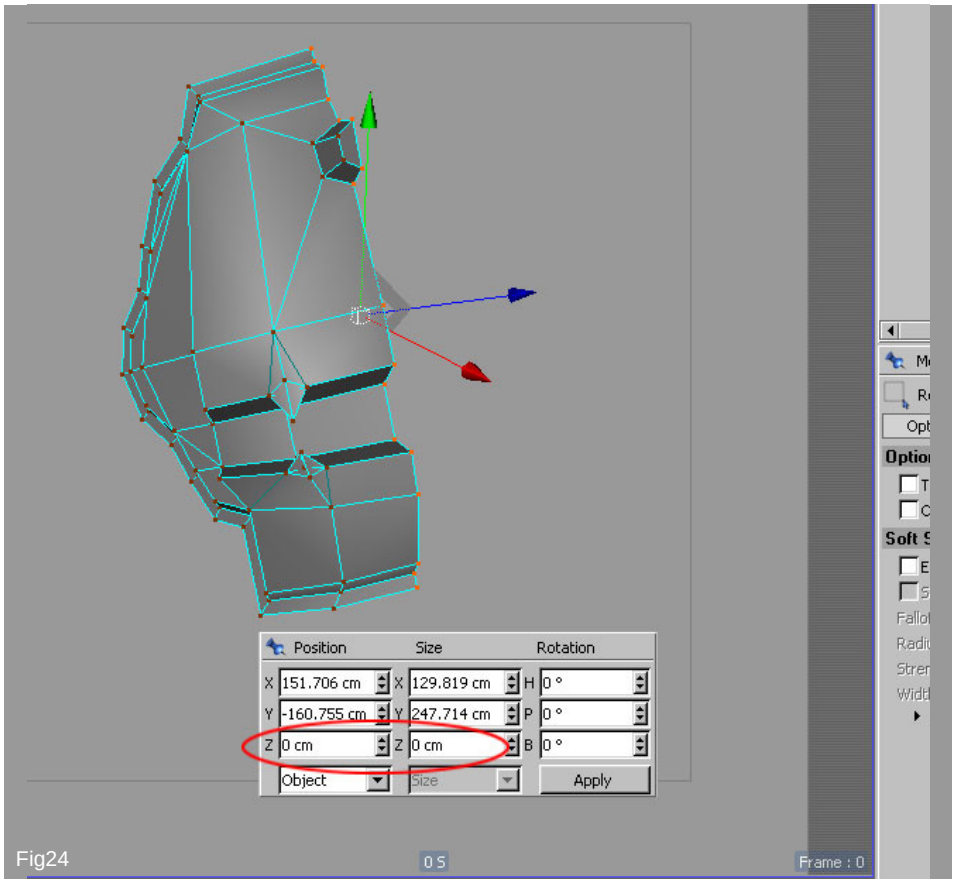


Fig24

24. Now it is time for the armour pieces – the first of which is the main shoulder section. As this is symmetrical we can delete one half to start with. Position the central points at coordinates=0 on the Z axis like shown in Fig24.

25. Now map both sides separately using a planar map, rotating the gizmo to keep the checker pattern as accurate as possible (Fig 25).

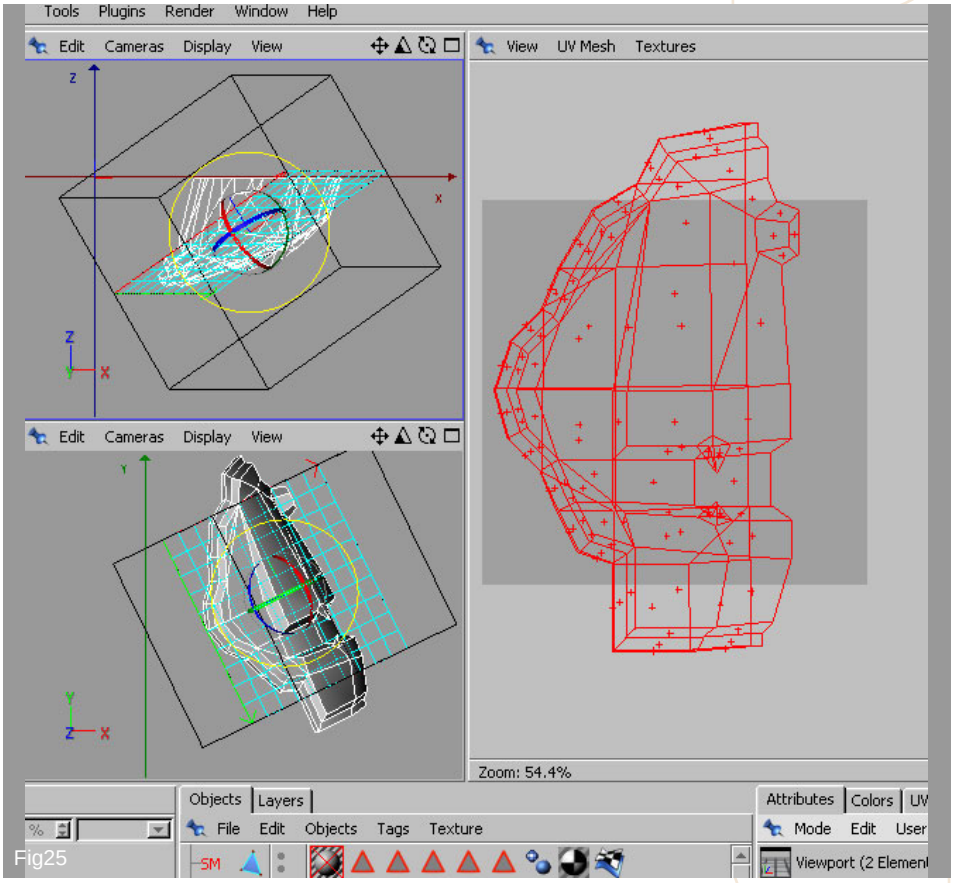


Fig25

26. Once done, duplicate the piece by first selecting the whole poly's and then using the Mirror tool as we did for the leg. Fig26. Make sure that in the properties of Mirror tool the "Weld Points" box is checked. You can use exactly the same methods to map all the armour pieces. In the case of the accessories you can planar map all of these and will not need to do anything different to what we have done already.

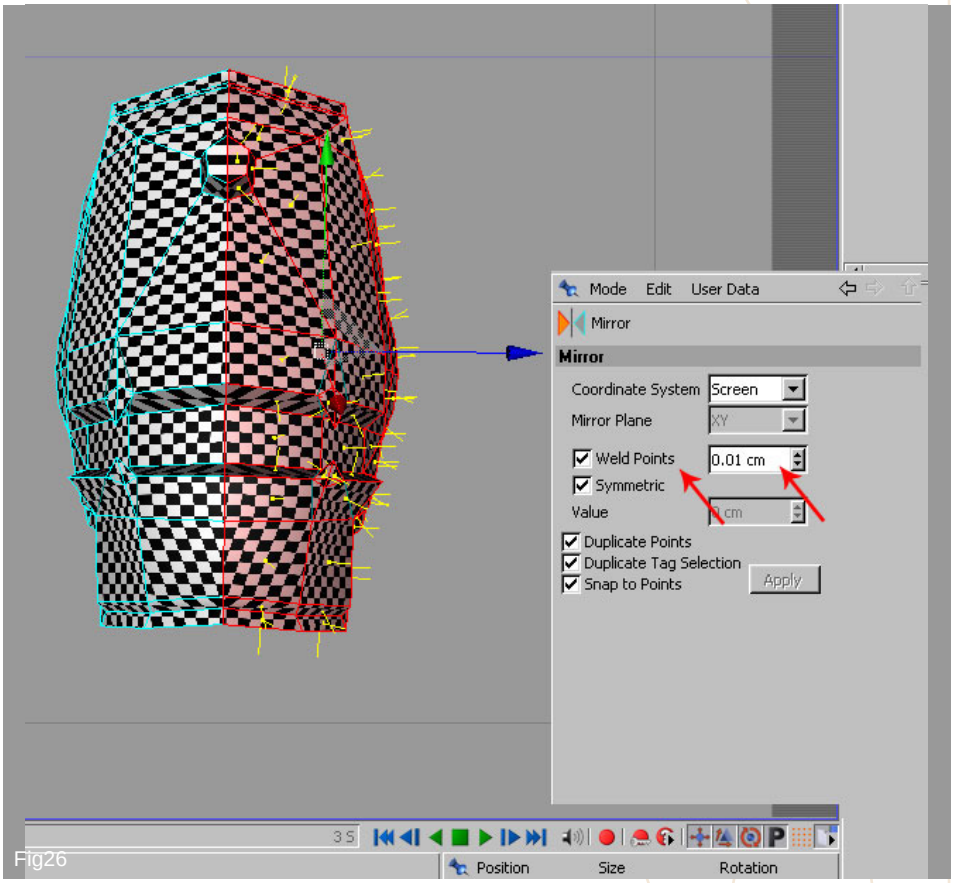
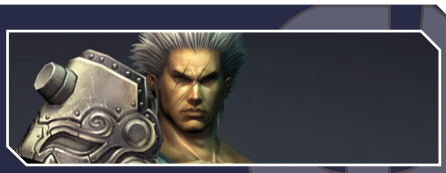


Fig26



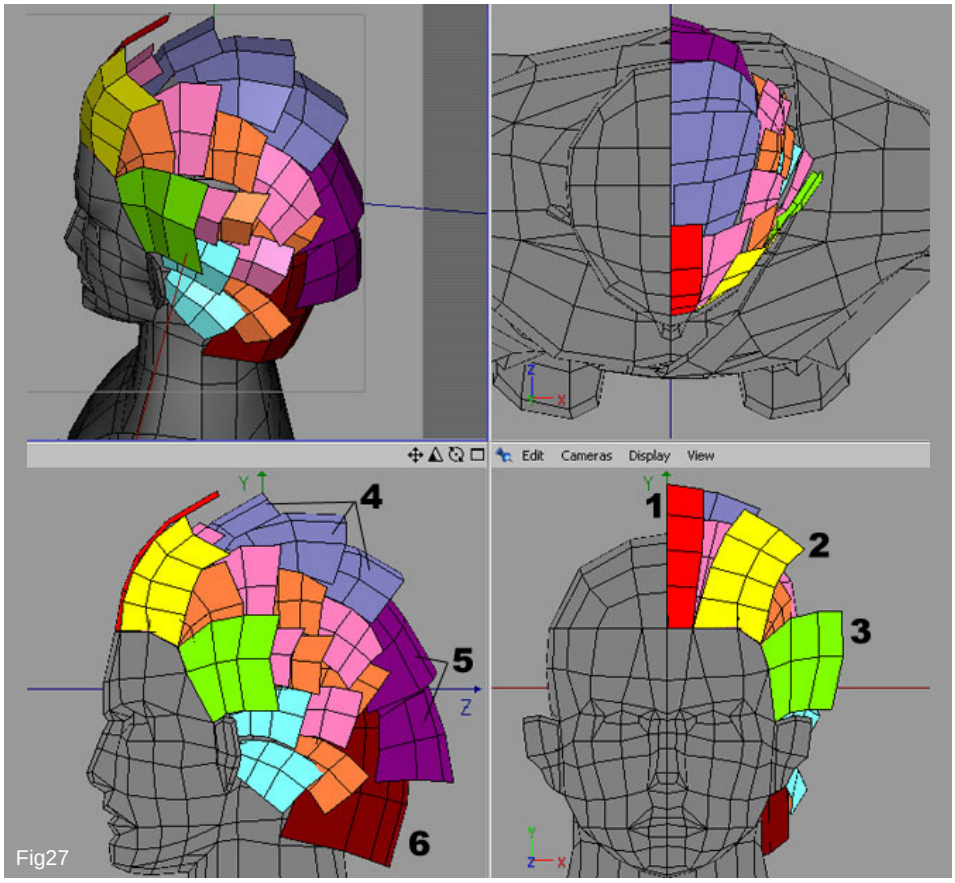
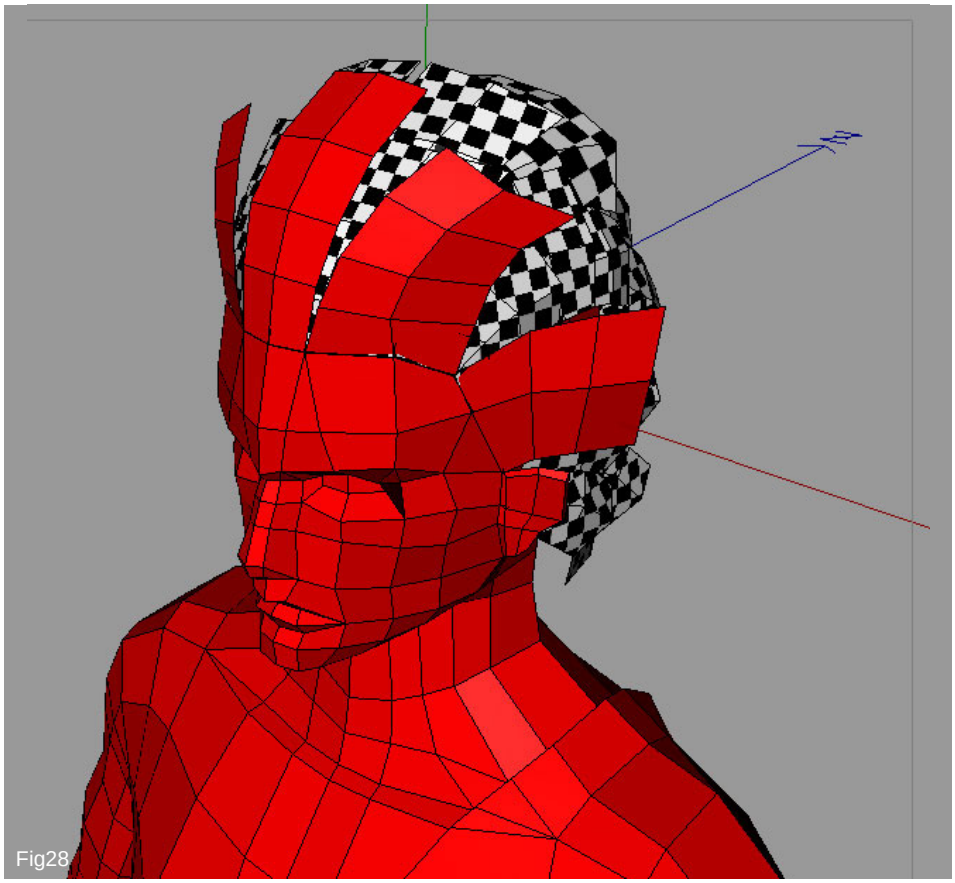


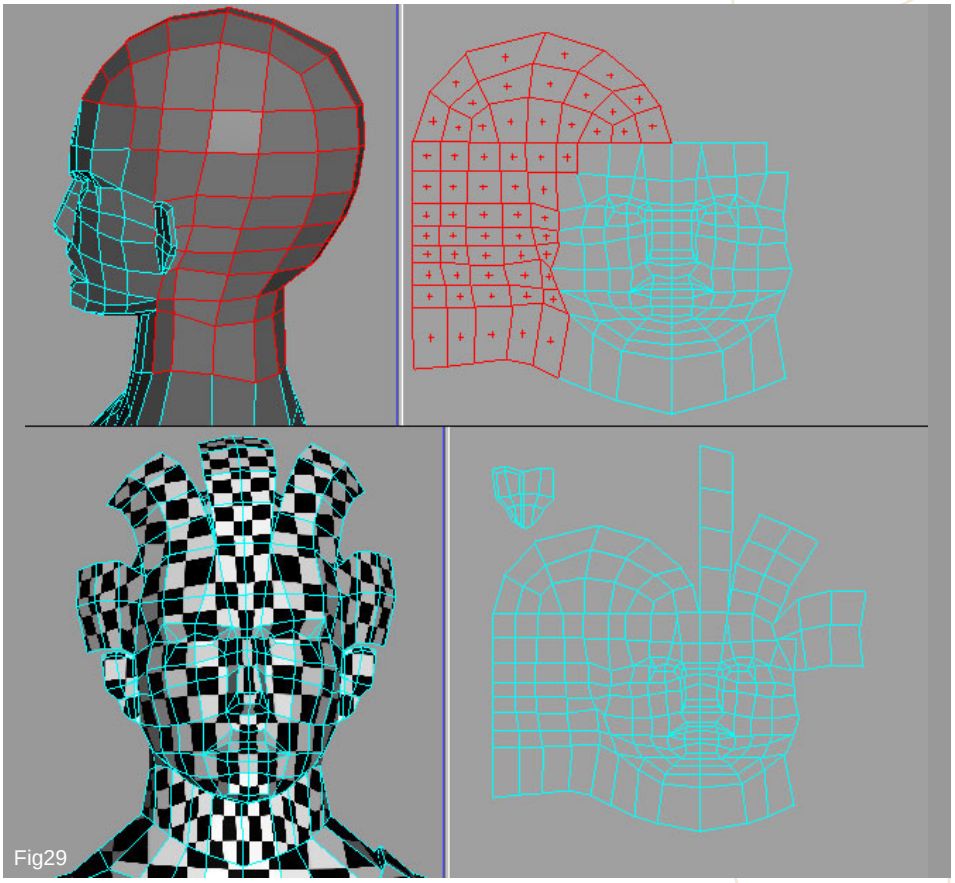
Fig27

27. Once you have finished with the armour and clothing it is time to move onto the hair. Because there are many pieces that make up this area it is unnecessary to individually map every element as it would take up far too much texture space. There will be just under fifty separate meshes that make up the hair but we will only have to map nine of these. The idea is that we map the nine sections and then duplicate them to make up the rest of the hair. These groupings are visible in Fig 27 and are colour co-ordinated to show how they have been organised. In the bottom right you can see that the front three poly's have been separately mapped (numbers 1-3). Along the top of the head there are three blue poly's so you would only map/unwrap one and then copy this twice, snapping the verts to line up exactly with the remaining groups. There will off course be a bit of stretching on the checkermap as each of the meshes varies slightly but nothing serious.


Fig28

28. When the hair section is mapped you can attach the front three sections to the main body as shown in red in Fig 28 but leave the rest of the hair pieces as separate objects; the reason for which shall be revealed next. Select the front three groups of poly's and split them from the hair. Remember to delete those poly's from the hair mesh. Once you got the new object with those three sections add the Symmetry, make it editable then connect them to the body.

29. In the BP UV Edit select the poly's like shown on the top left of Fig29 and flip them horizontally then overlay them on the left part. Move now the three front hair pieces in line with the top of the forehead, scaling them accordingly as seen on the bottom of figure.


Fig29

30. This concludes the mapping section of the exercise and now we need to assign a material to our mesh in preparation for texturing by dragging the material onto each and every mesh. Go in Material Manager and create a new material. In this material create a new Texture. Fig.30. Assign a name and the size of your texture, this will create a PSD file which will be edited with Photoshop. Assign this last material to our model replacing the checkerboard texture. The model will appear white.

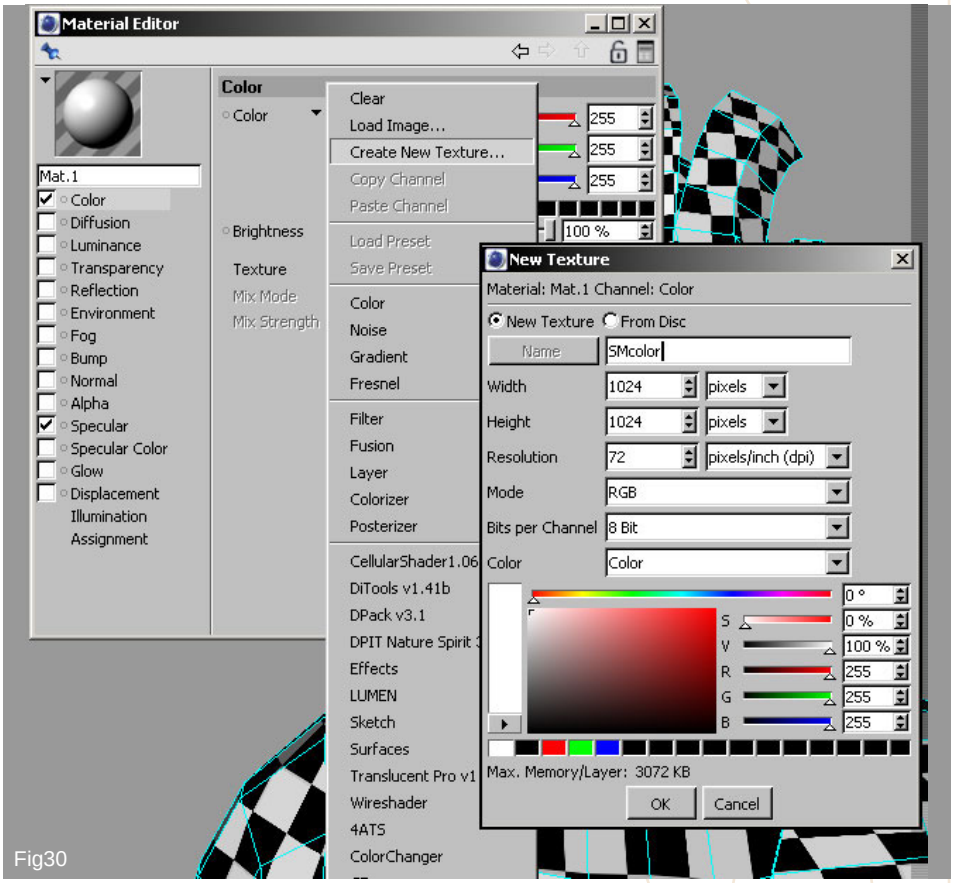
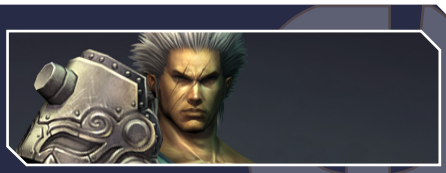


Fig30



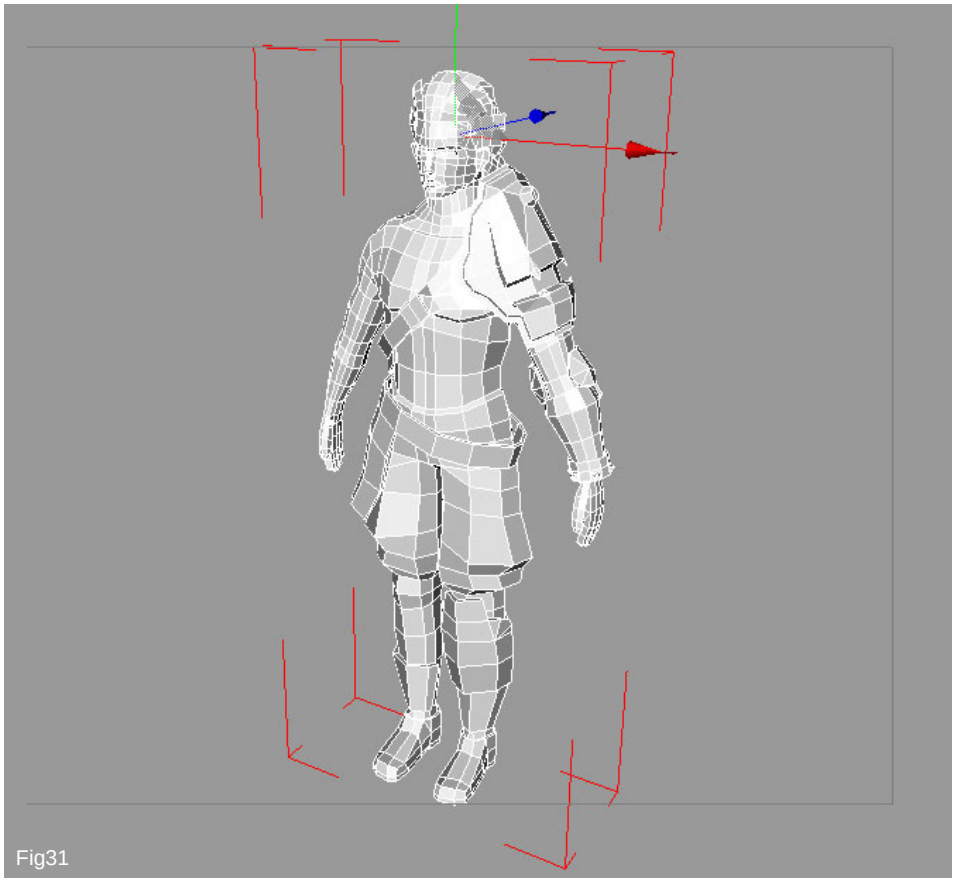


Fig31

31. Now as you remember from earlier on in the tutorial we unwrapped each of the meshes that make up our character. Before we begin the texturing phase we need to arrange all of our pieces into a template that we will export as a wireframe and will represent our final texture layout. In order to see all the unwrapped geometry together we will have to attach all the pieces of geometry into a single mesh temporarily. So connect the rest of the hair with the body as seen in Fig31.

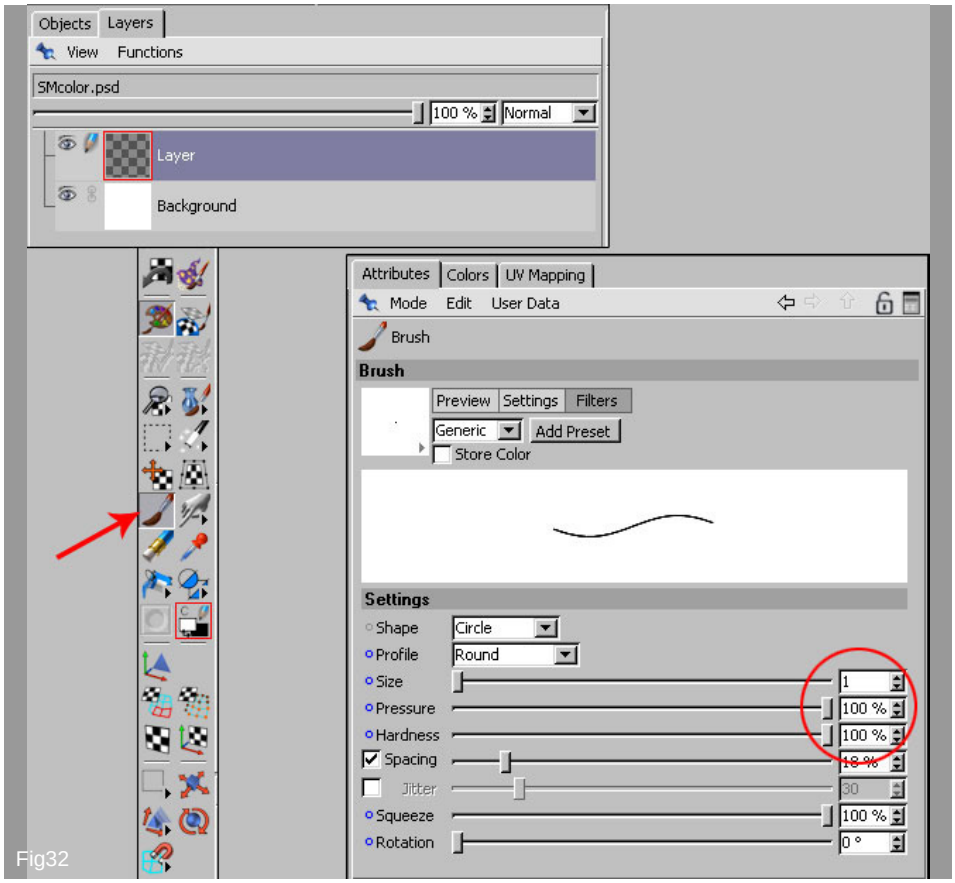


Fig32

32. Last thing that remain to do is to get the wireframe templates that will act as your guide. Fit all UV's with the canvas of your texture scaling and rotating the various meshes. Try to assign more space for the important pieces. Once you done add a new layer as seen on the top of Fig32.

33. Select the Brush tool and change its size, pressure and hardness in its properties. Select now the mesh like shown in Fig33 and from main menu go into Layer and choose Outline Polygons. This will draw onto your texture the outline of all poly's and this will be your guide to make the texture in Photoshop. Save the texture.

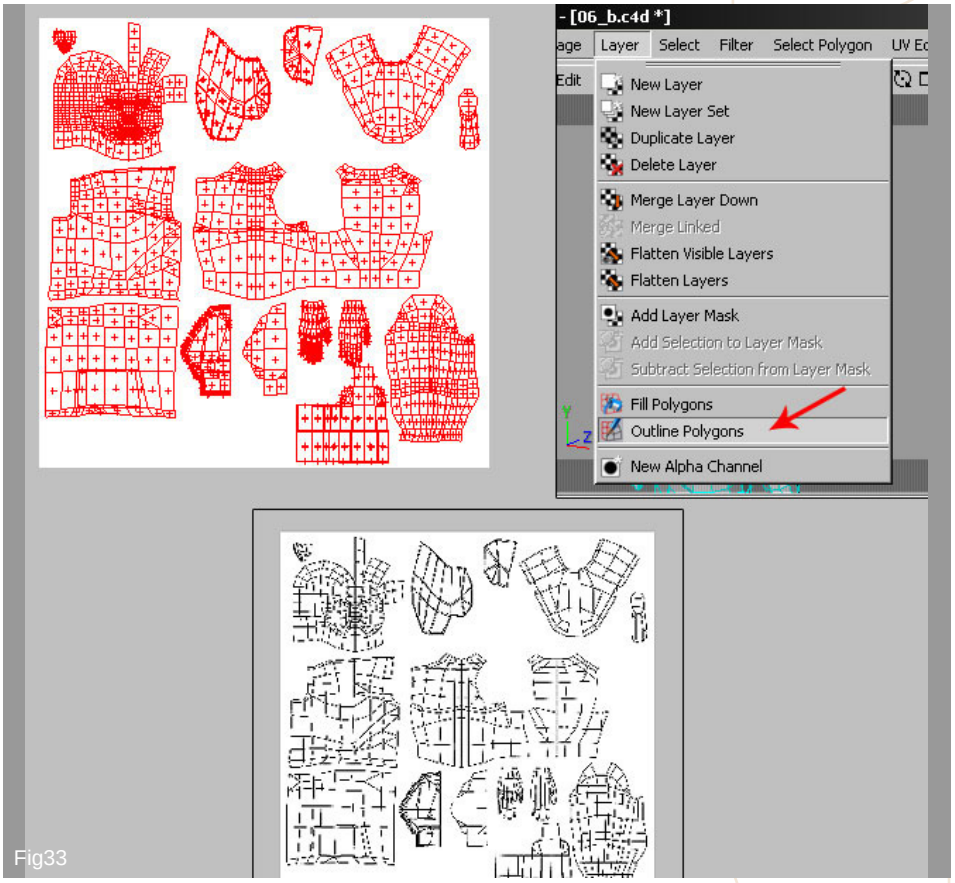


Fig33

34. You should now have two templates that between them represent the entire character. Before we begin texturing there is one final thing to do. You will have noticed throughout the tutorials so far that the geometry has looked very angular with numerous hard edges. Fig34

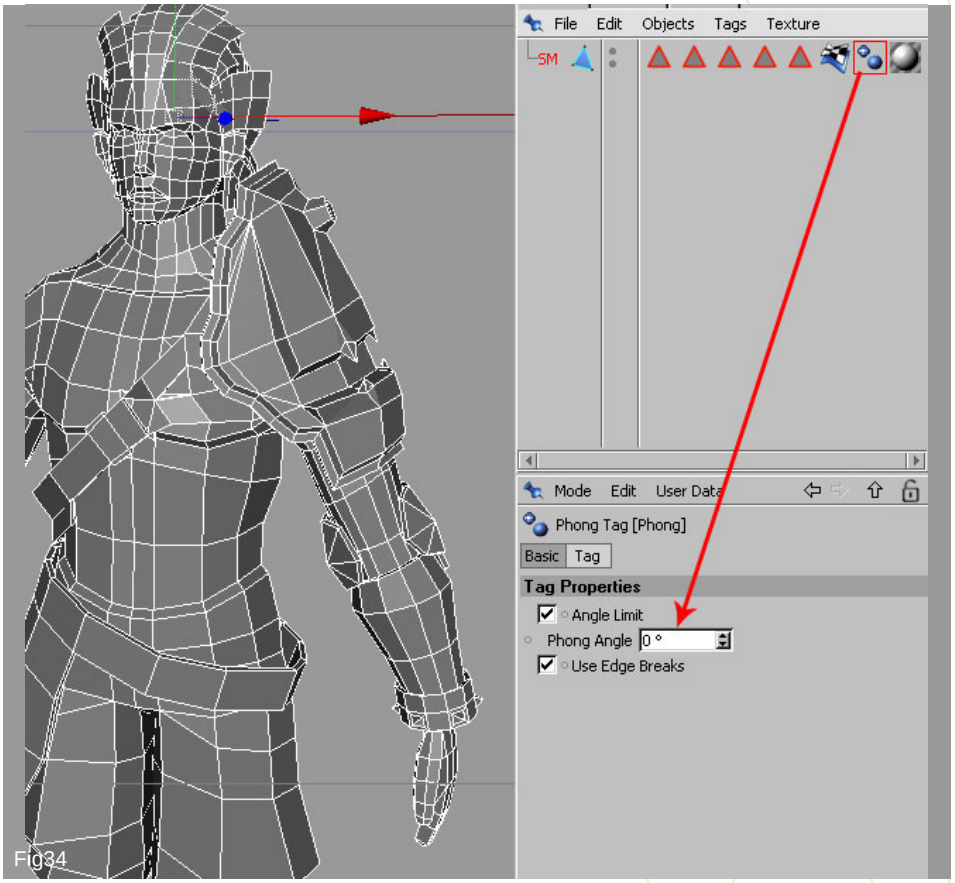
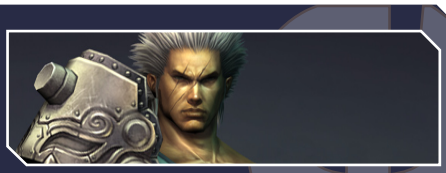


Fig34



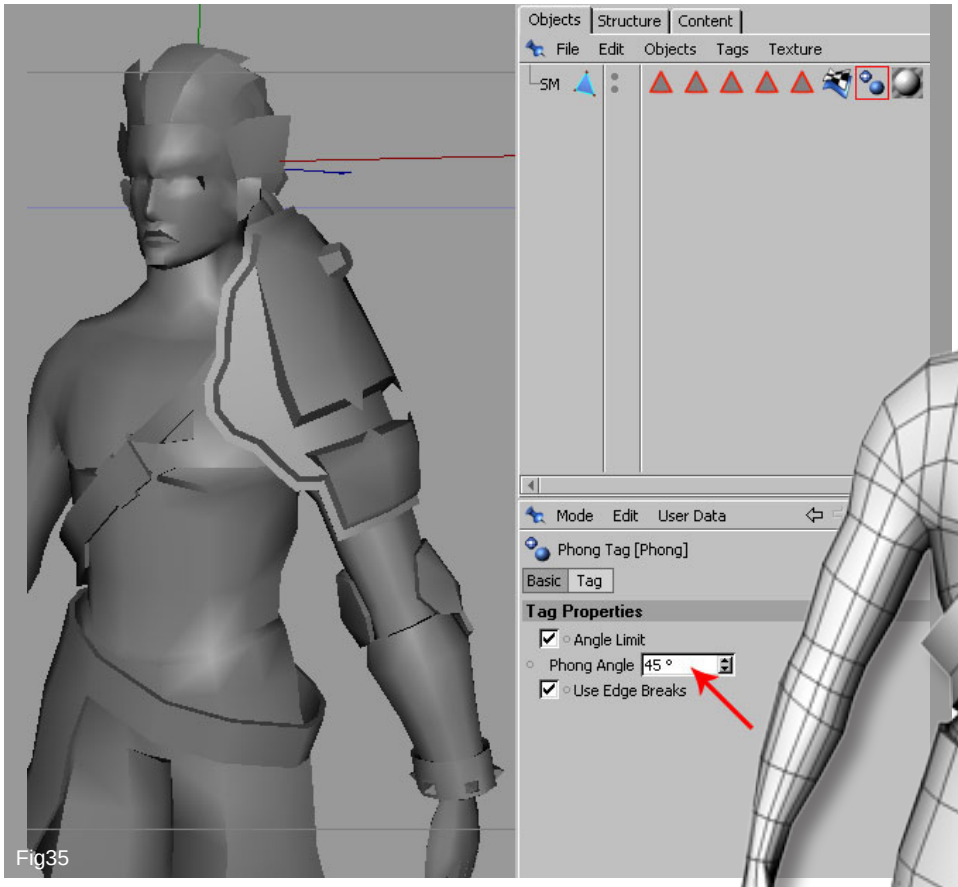
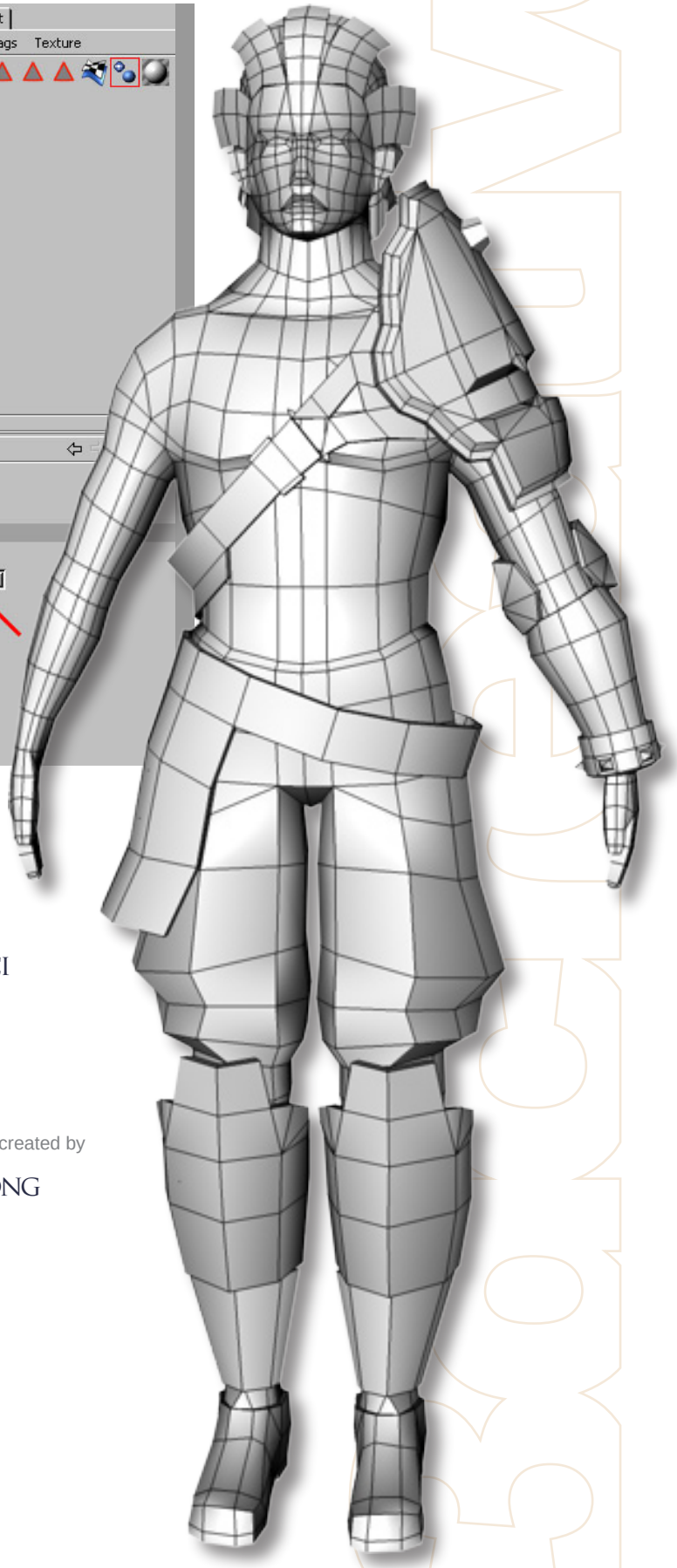


Fig35



35. We are now going to iron out the creases by changing the angle of the Phong Tag as you can see in Fig35.

This concludes the mapping stage of the tutorial. It has been a lengthy and detailed section even though I have not covered everything. I hope you have managed to follow every step without too many problems. Next month we will begin the last phase of the tutorial – texturing.

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The Swordmaster

Is our new precise, step by step tutorial for highly polished, low polygon game character with detailed texturing for real-time rendering. We have had the tutorial created for the 5 major 3d applications, but even if you are not a user of one of them, the principles should be easily followed in nearly all other 3d applications. Over the next 8 months we will outline in detail the process for creating the 'Swordmaster' you see on the left. The schedule for the different parts of the tutorial is as follows:

Issue 009 May 06

Modeling the Head

Issue 010 June 06

Modeling the Torso

Issue 011 July 06

Modeling the Arms & Legs

Issue 012 August 06

Modeling the Clothing & Hair

Issue 013 September 06

Modeling the Armour

Issue 014 October 06

Mapping & Unwrapping

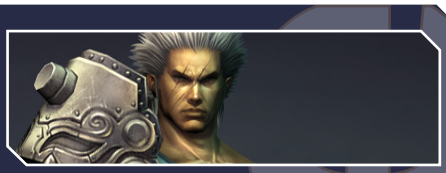
Issue 015 November 06

Texturing the Skin & Body

Issue 016 December 06

Texturing the Armour & Clothing

Enjoy ...



Part 6
Part Title
Mapping and Unwrapping

Introduction

Hi and welcome to the sixth part of the Swordmaster tutorial series where we are going to unwrap and UV map the model. Not all of the parts will be covered in this section, but even beginners will gain enough skills so they should be able to complete mapping process by themselves. In order to fit all crucial things of mapping into one section certain repetitive parts are omitted but hopefully most of the users will successfully UV map the model in whole. So, let's begin.

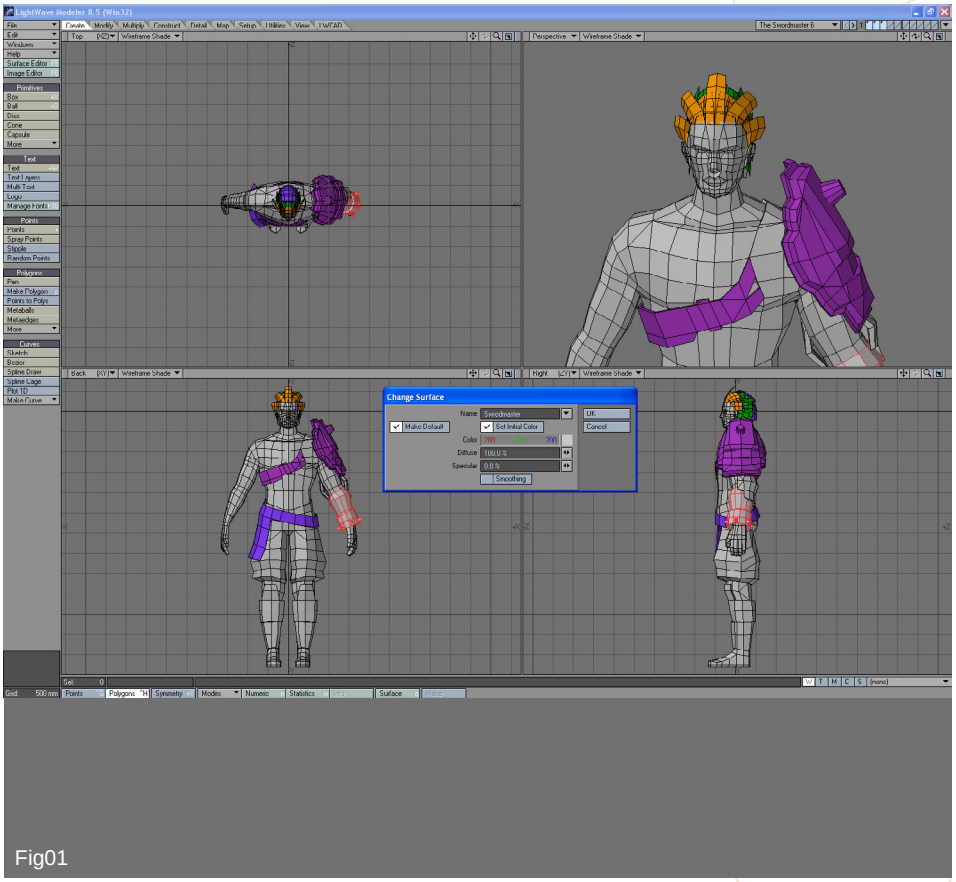


Fig01

1. First of all, we'll apply the same surface for whole model. So, select all layers containing model parts and press "q" to bring up Change surface requester. Enter suitable name in the name field, leave everything else as it is and hit ok. Note that whole model is now having the same grey colour.

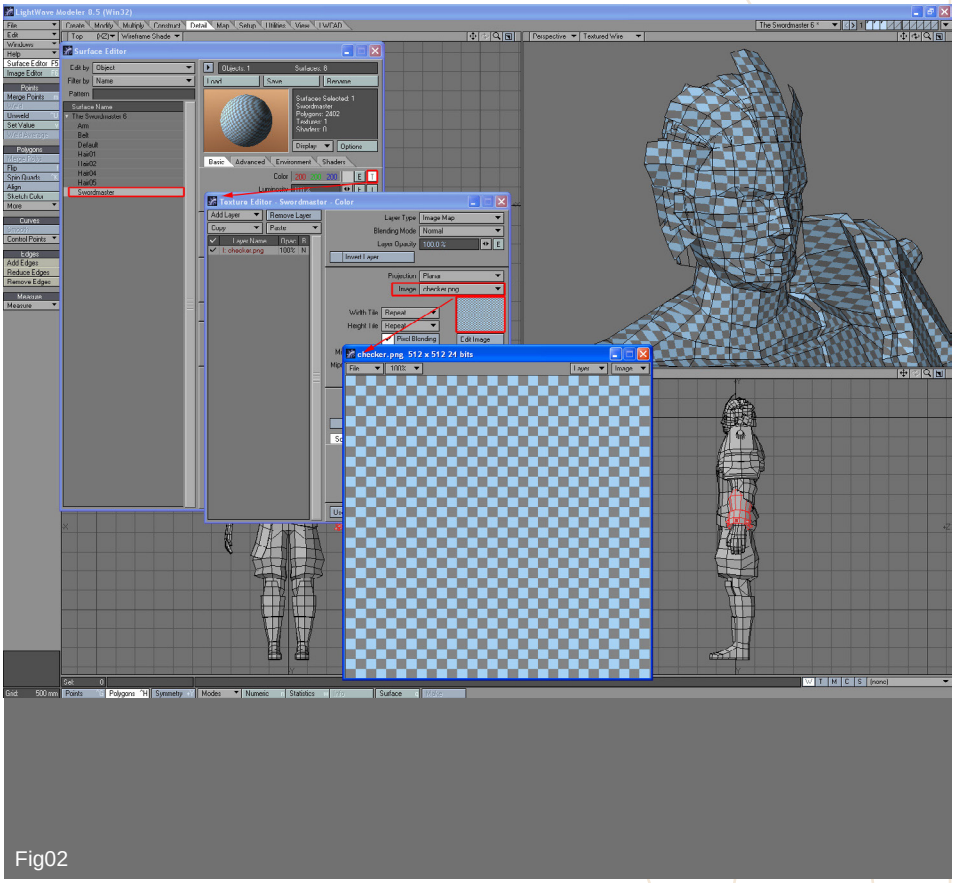


Fig02

2. Open up Surface editor panel and select Swordmaster surface from the list. Click little 'T' box next to Colour channel to open texture editor for colour. Leave everything as it is and select checker image in drop down menu selector. Checker image is not provided here but you can easily create it in any photo editing program or render it out from LW. To do this, use Texture filter from Image Processing-Image filter (Ctrl+F8) in LW Layout, leave Offset, Scale and Axis as it is and click Texture to open Texture editor. For Layer type set Procedural Texture, choose Checkerboard for Procedural Type and set colour for some nice blue like R160, G200, and B240. Set scale to 30mm for all axis and 15mm for X and Y axis position. Go back to Effects window and set backdrop to 130 for

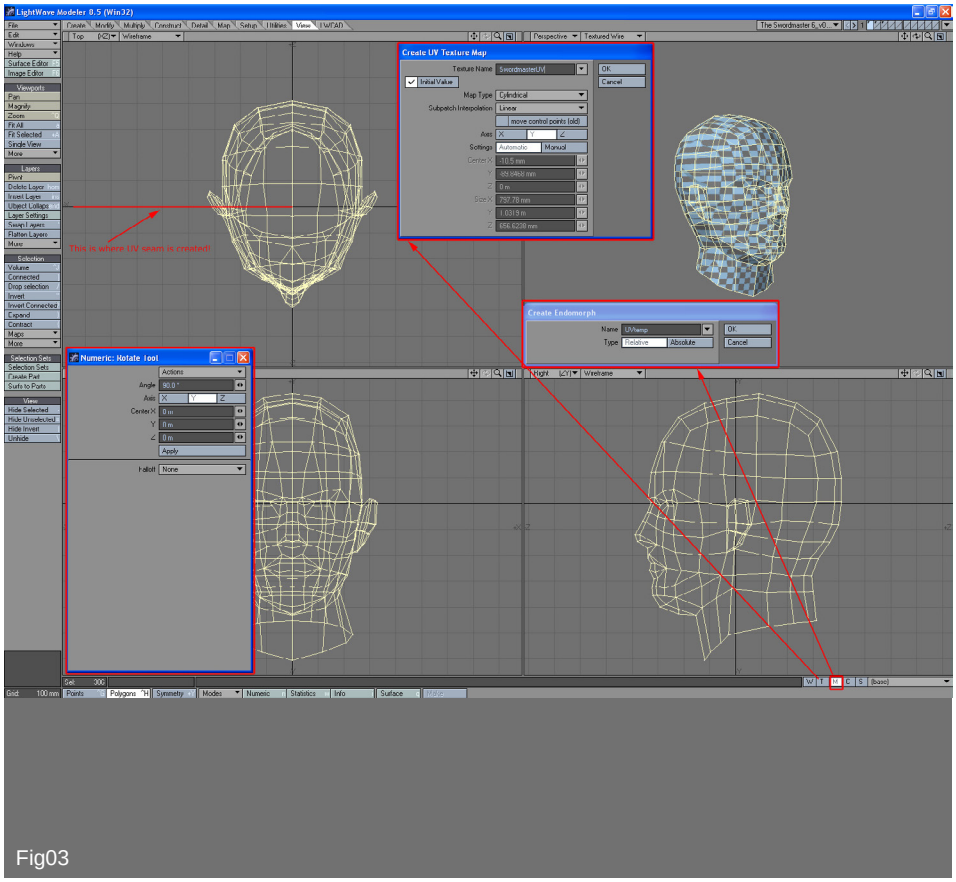


Fig03

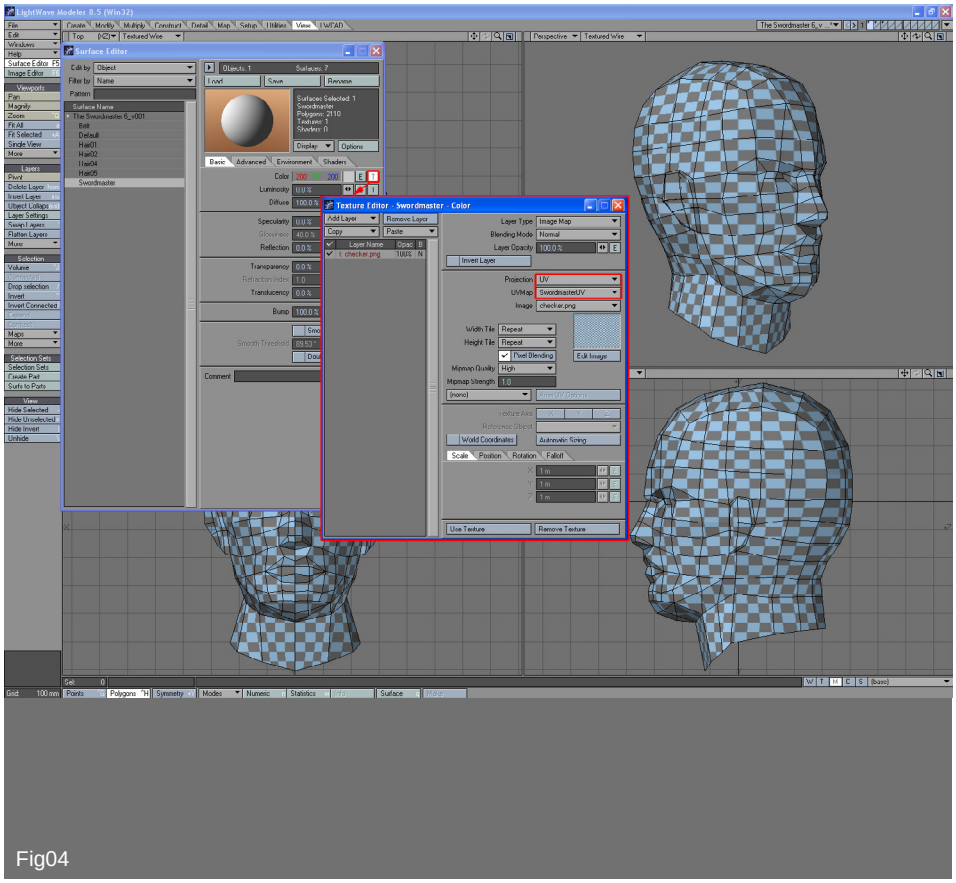
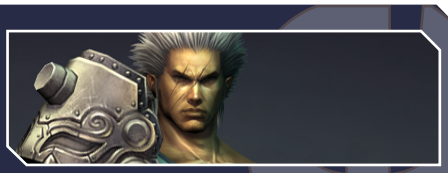


Fig04

Red, Green and Blue channels. Set camera size to 512 x 512 resolution, hit F9 to render and that's it. Quick and dirty checkerboard texture, just remember to save the image from render window.

3. First we need to create UV map for head, so select head and neck polygons and hide everything else (View-View-Hide Unselected command or simply "=" shortcut). If you would apply Cylindrical UV map now the seam of UV map would be on totally wrong place and that is –X line when you look from the top view.
To avoid this problem, create new temporary morph map, click on the M box in the lower right corner tool box in Modeler, select new from drop down list next to it, enter some name for it (e.g. UVtemp) and click OK. Now rotate the model -90 degrees along Y axis with all centres set to zero (you can easily do this by pressing "y" for rotate and "n" to bring up numerical requester. Now create a new UV map by selecting T box in lower right corner, and new from drop down list next to it. Enter texture name, check Initial Value box, set Map type to Y, Subpatch Interpolation to Linear, Axis to Y and hit OK.

4. As you probably seen nothing actually happen to the model. This is because our surface setting for swordmaster material is still on planar mapping, not UV. So, open the Surface editor again, select swordmaster surface and click T box next to colour channel. Change Projection type to UV and set UVMap to SwordmasterUV we created in previous step. Now there is checker texture applied to the model using UV mapping.



5. In order to see UV map created two steps above, we must change one on the Viewports to UV. Switch upper left Viewport window from Top to UV Texture, and you'll get UV texture in the window. Make sure there is SwordmasterUV texture selected in lower right drop down list when T box is selected, otherwise you won't see anything in the UV Texture Viewport. Click M box (for Morph maps) and select "(none)" from the drop down list to return rotation of the model into it's initial position.

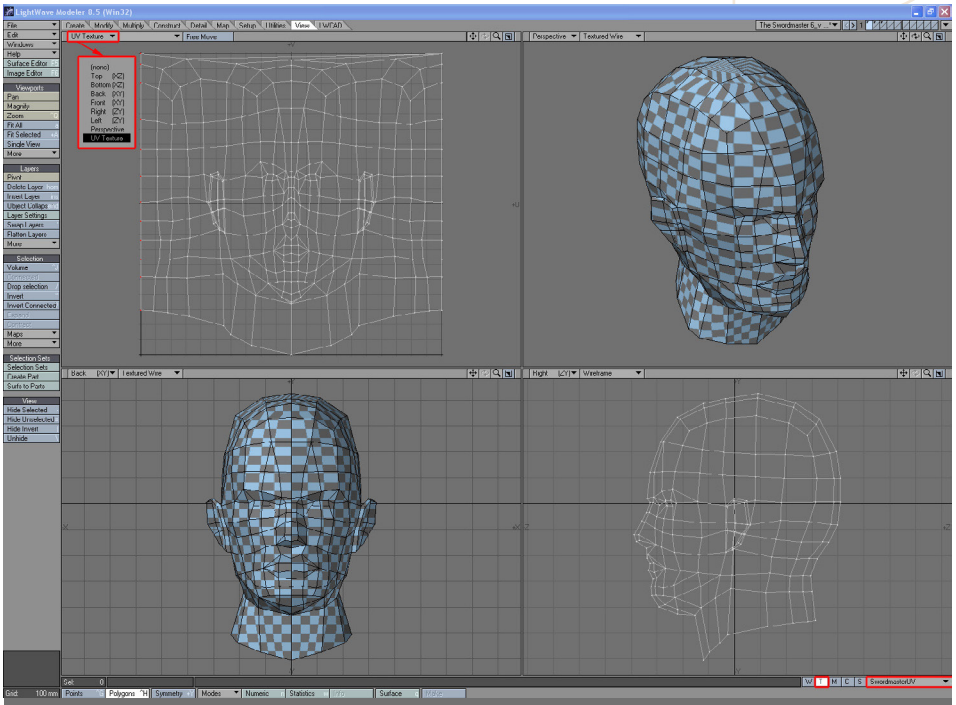


Fig05

6. You are able to use vast majority of Modeler's tools directly in the UV Viewport. Using the Stretch tool ("h") for example we'll rescale the UV map until all checkers appear square on the model itself. As you probably noticed some polygons on the top of the head and under the chin are distorted but we'll address this problem later.

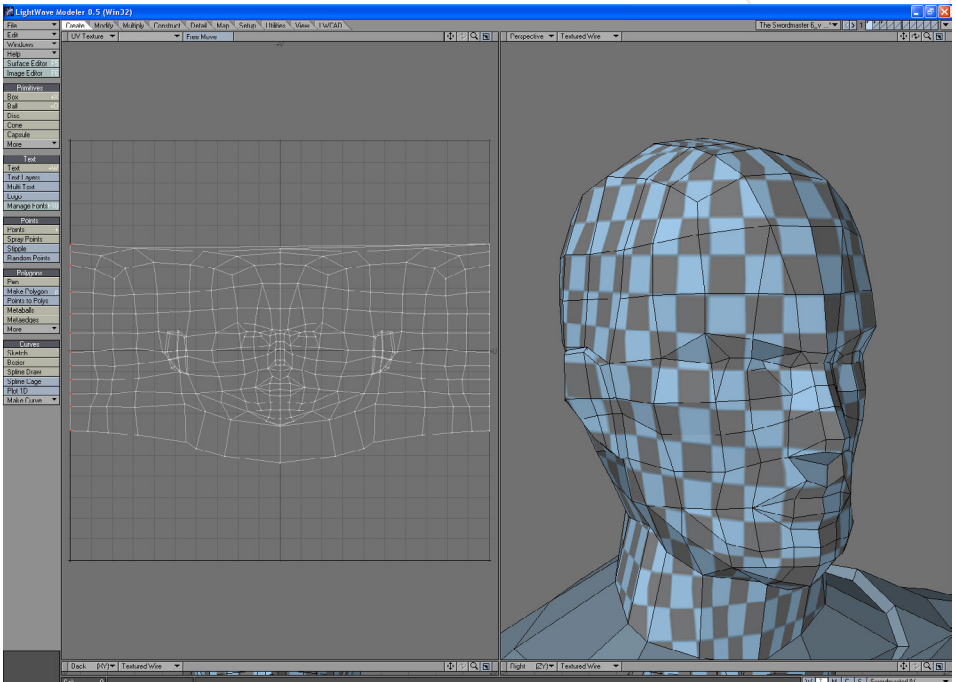


Fig06

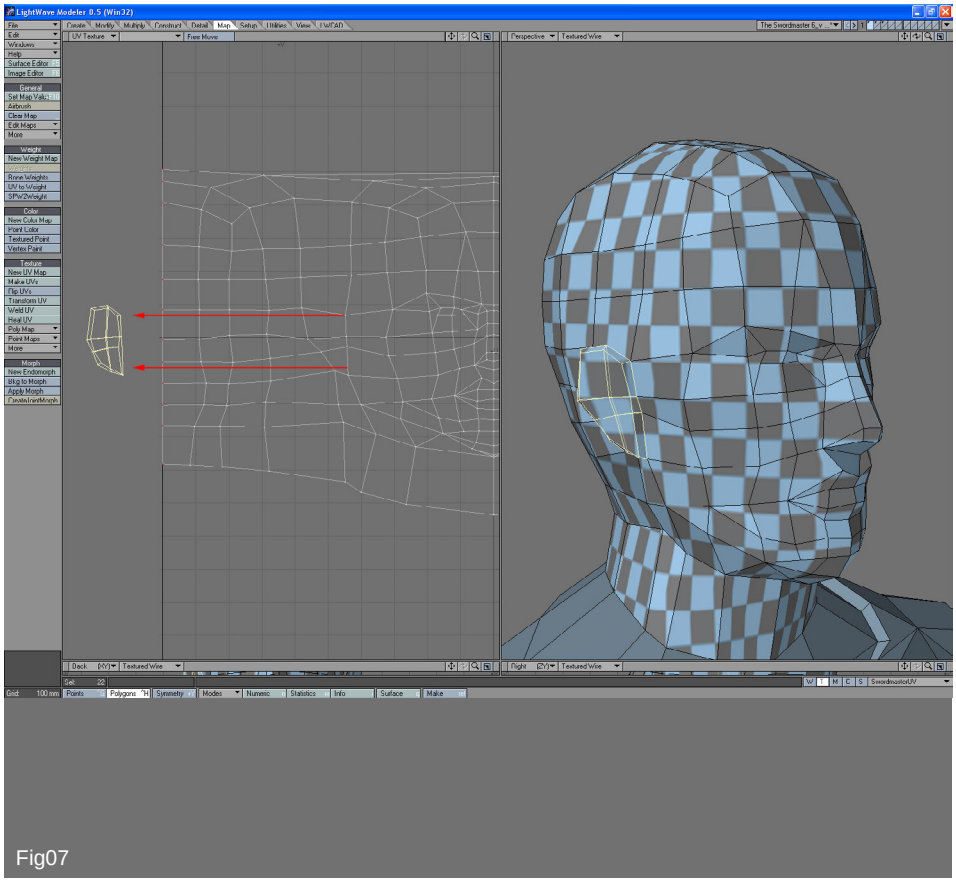


Fig07

7. Now we'll separate ear maps from the head map. Select ear polygons, Cut and Paste them once, select on of them again and hit "]" to select connected polygons and move ear polygons away to the right in UV viewport.

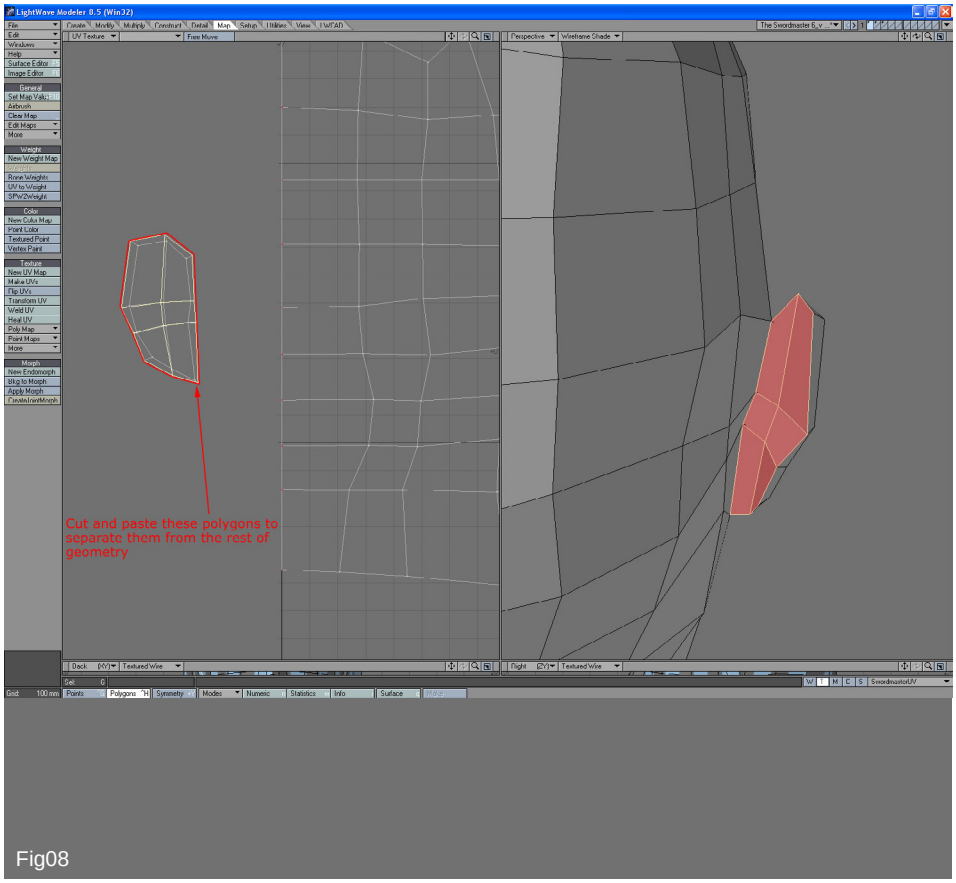
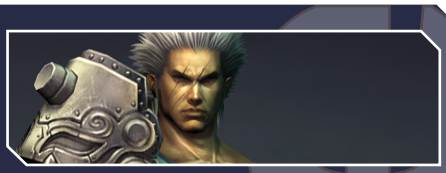


Fig08

8. Select polygons of the outer ear (marked red in image) and again cut and paste them. Select of them again and hit bracket key "]" to re select these polygons.



9. Select Map-Texture-Transform UV tool, check Scale box and enter -100% for the U value. This will flip the texture along U axis. There is of course Flip UV's tool just above the Transform UV in standard Layout configuration but I prefer to use Transform UV because it makes possible to more numerical transformations at once as well as just flipping. Now move these polygons so they are just nest to inner ear polygons.

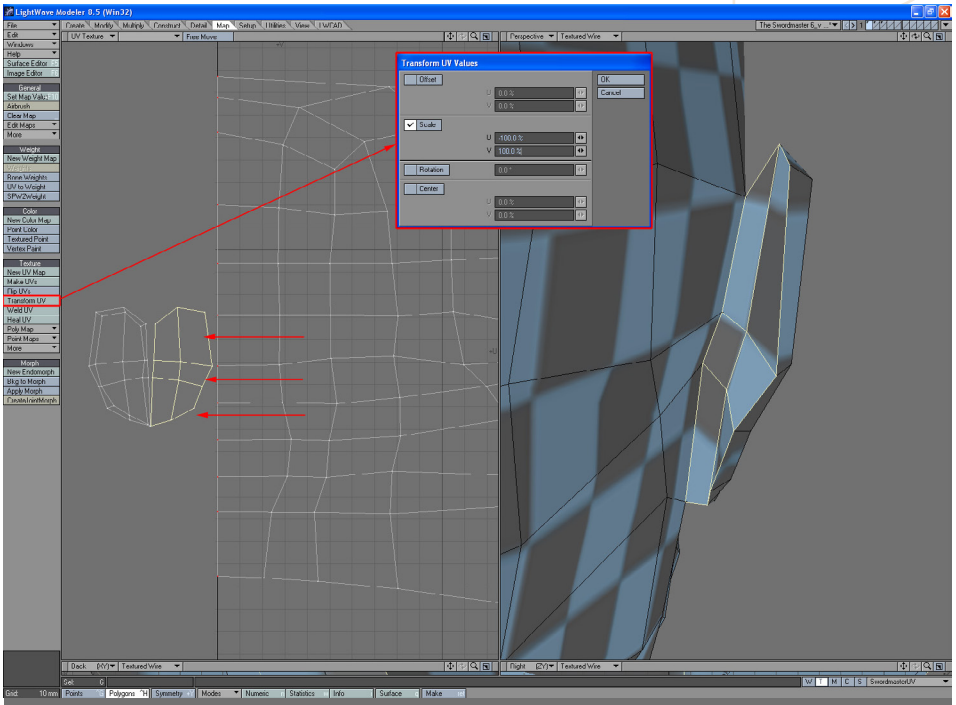


Fig09

10. Select marked points in the UV viewport, make sure Action Center is set to Selection and use the Stretch tool in combination with Ctrl key in UV viewport to stretch the points to zero along U axis. This will place points at the exact same position in UV values.

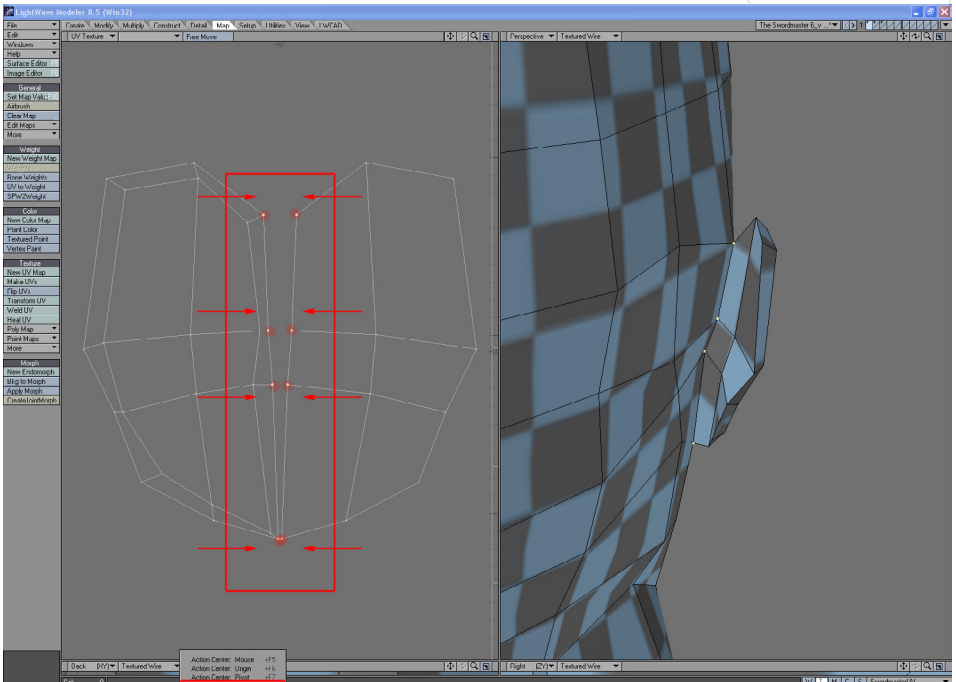


Fig10

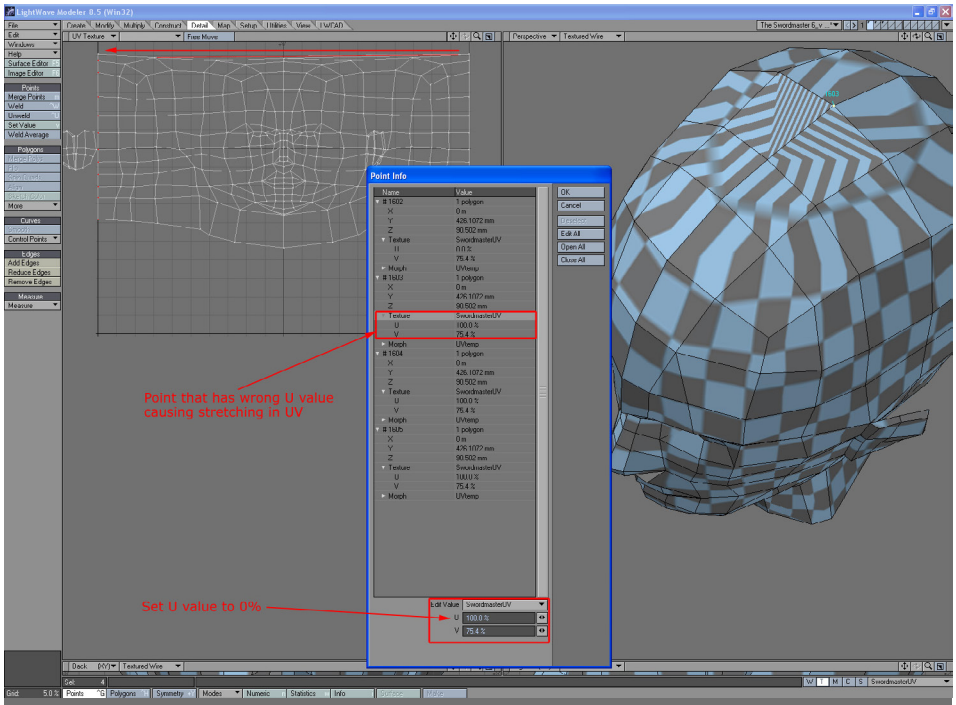


Fig11

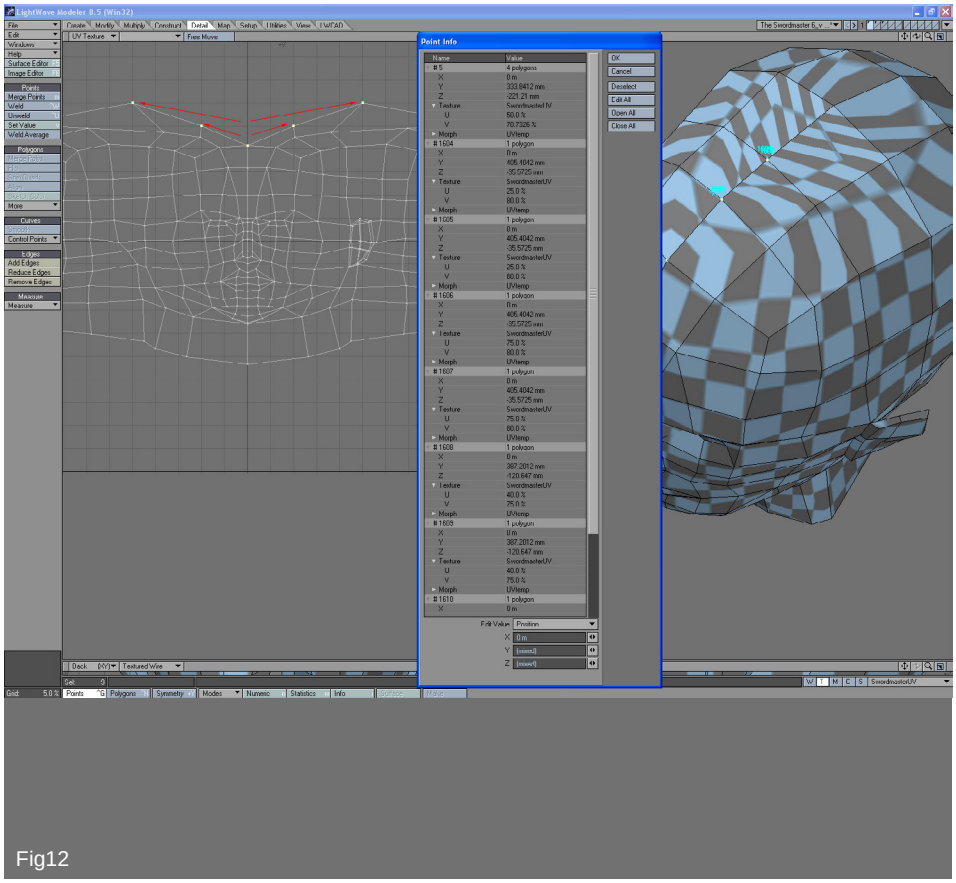
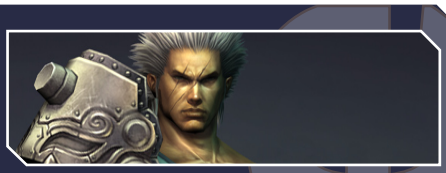


Fig12

11. As we mentioned earlier, there are some wrong placed polygons at the top of the head. It is caused by cylindrical mapping of the UV's and humans don't tend to have cylindrical heads ;) Fortunately enough, there are some simple tricks to fix this problem. Select point marked red in image and although it is in same place in the image it shows in two places in the UV viewport both on 0% and 100% on U axis. That's why polygon on the top stretches all around UV map. With this point still selected activate Detail-Points-Unweld tool to, well, unweld it into four separate points. It's impossible to move anyone of them directly in the viewport because there are currently lying at the exactly the same place. Luckily, we have Info tool ("I") so activate it. Here you can find all information about points, there X,Y,Z as well as Morph map and UV values and edit them directly. As you can see there are 3 points with U value of 100% and one of them with U value of 0%. There should be two with 0% and two with 100% value. Locate the wrong one and set it's U value to 0%. This may not be the one on the image, but try until the line marked red goes into direction of the arrow in image.

12. Using the same technique of unwelding and editing in info window separate next two points from the top of the head placing point pairs left and right from the center of UV map. Note that points in image aren't single but double points laying at the same place in UV space.



13. Select polygons of the head and neck on the side that has not had ear polygons unwrapped, model's left side in our case and delete them. You can easily do this in UV view, where you can see the ear polygons not moved from the head. Select points that remained after deleting and apply Map-General-Clear map to clear them from UV map. Use Drag tool in UV port to readjust the map so there are no obvious checker map stretching on the model. I know, dragging points in UV map can be slow and tedious process and there are only few people in the world that actually enjoys it, but it is necessary evil and something that has to be done. Scale map down so it fits in the UV port and make sure center points are in 50% U value. Image shows map after adjusting with checkers scaled town to gain more details.

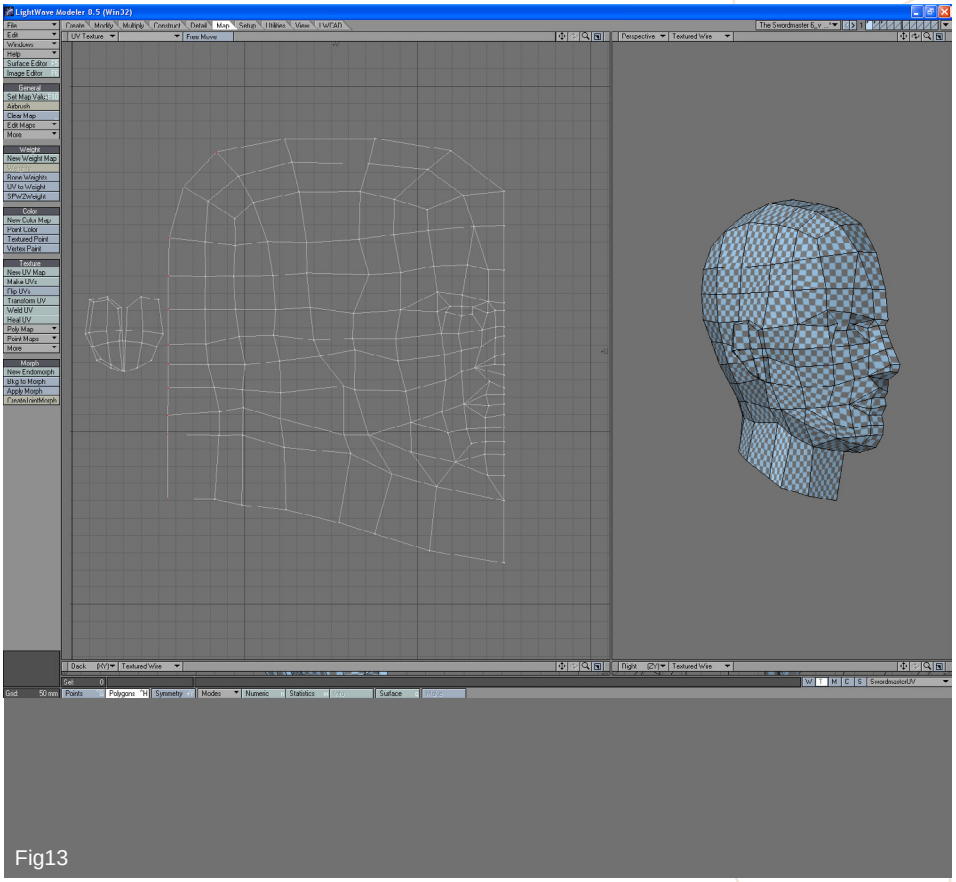


Fig13

14. Select all mapped polygons in the UV view, hit Shift+v to activate Mirror tool. Press "n" to bring numerical panel. Leave everything as it is (X axis, all zeroes for Center) but uncheck Merge points box. Invert selection (View-Selection-Invert or " key) and activate Transform UV tool from Map-Texture panel. Set Scale to -100 for U value and hit ok. Move flipped polygons in UV map to the right so it fits with center (that makes 1m movement in the Info box that's in the lower left corner of interface). Deselect everything and hit "m" to merge points. You can see red dots in the UV view, they indicate discontinuous edges in UV map. This now can be simply fixed by using Weld UV from Map-Texture (please note that Weld UV tool is available from Lightwave 8.2 version).

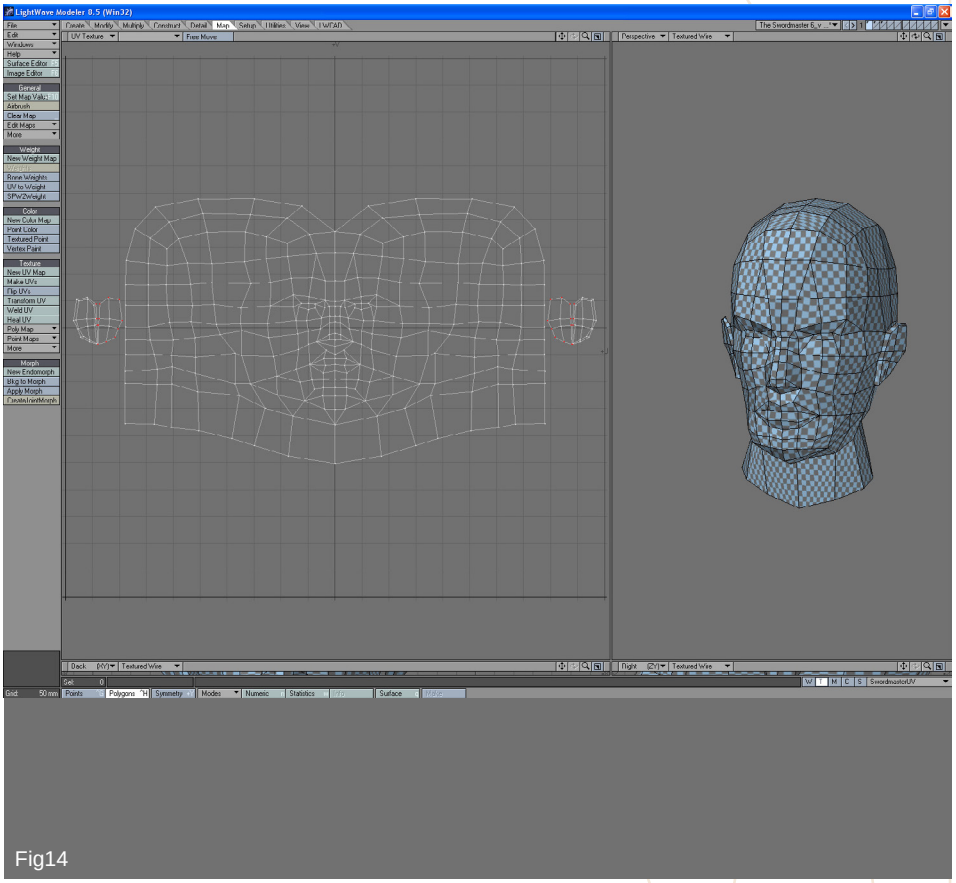


Fig14

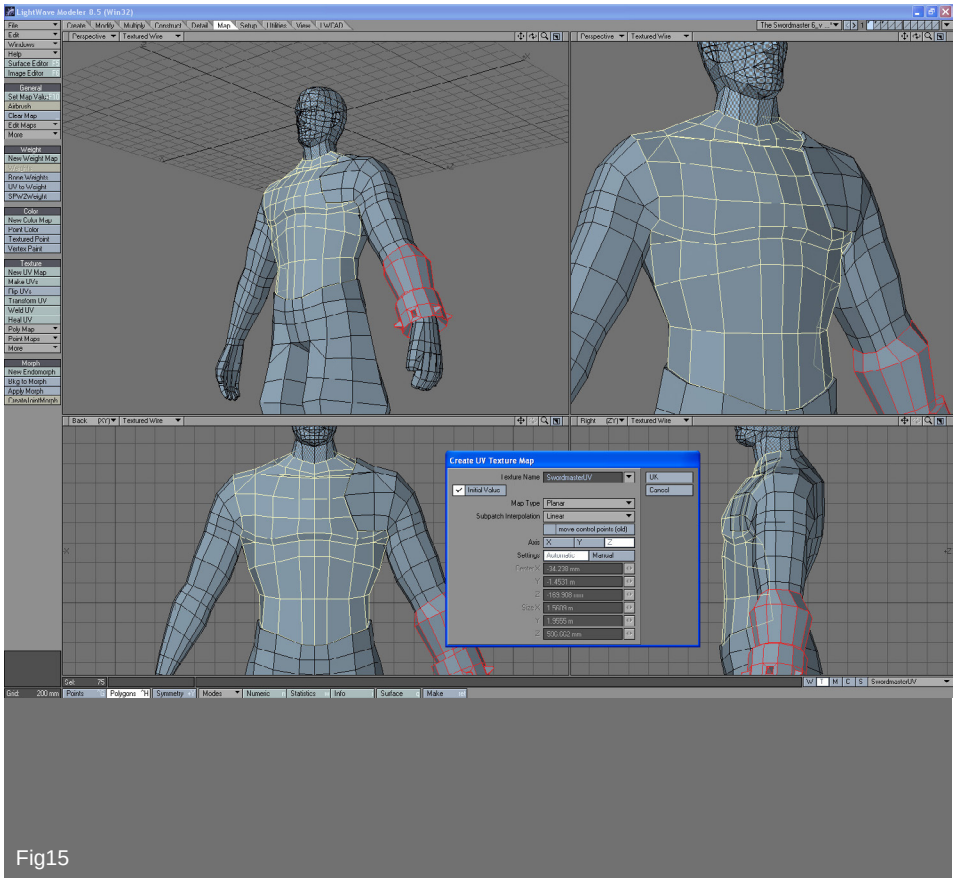


Fig15

15. Now we'll proceed with the rest of the model. Unhide everything ("/") and select front torso polygons marked red. Cut and paste these polygons to separate them from the model, select one of the polygons and hit bracket key "]" to select connected polygons. With T box checked, select (new) from dropdown list to bring up Create Texture panel. Select SwordmasterUV for texture name, change type to planar and select Z for Axis. Leave everything else and click OK to create UV map for these polygons.

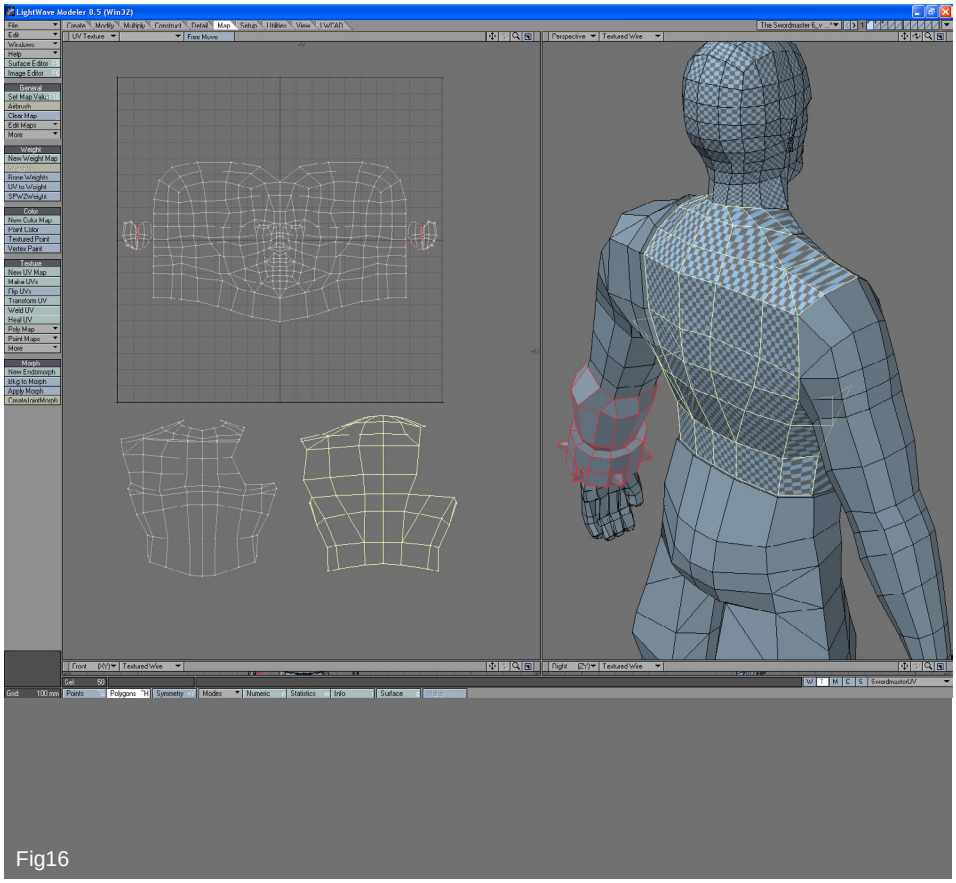
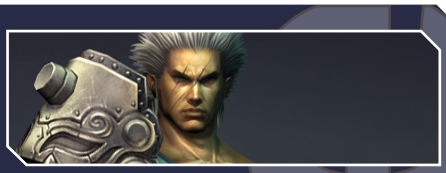


Fig16

16. Repeat the same procedure for the back side of the torso. In UV view align these new two parts, move away and scale them down.



17. Select seam points in UV view and use Stretch tool with Ctrl key to stretch them down along U axis down to zero. Now, one by one, select point pairs and stretch each pair down to zero along V axis. This will position seam points into exactly the same place in both U and V axis. To proceed to a fun part of UV mapping, grab the Drag tool and readjust the UV map to fix eventual errors in the UV.

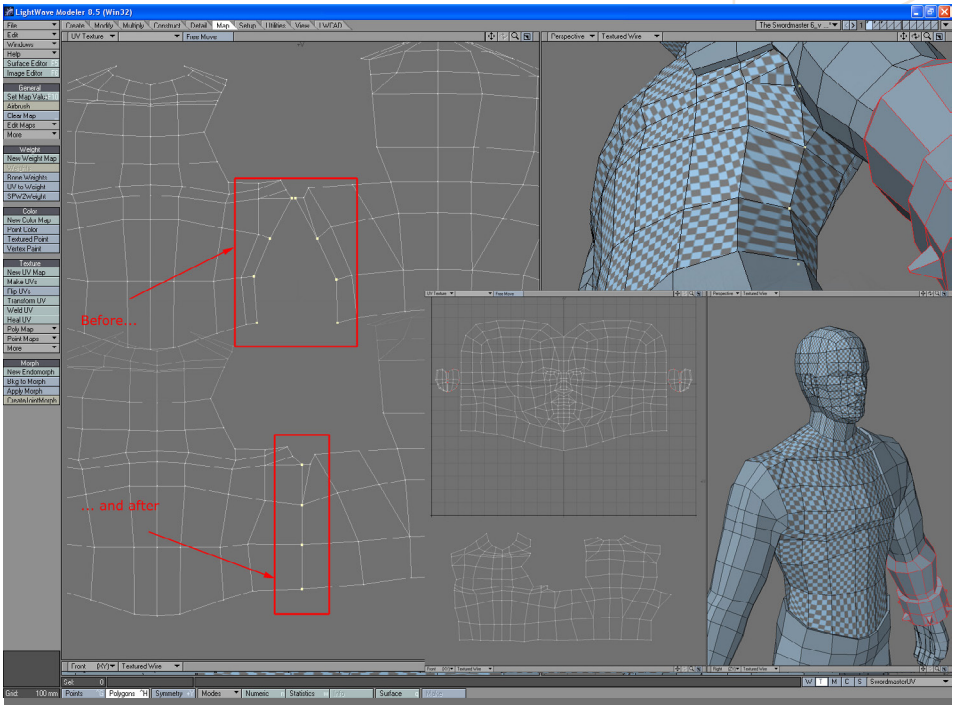


Fig17

18. Now we'll UV map the legs of the model. Select all polygons that make the model's left leg and delete them, as we are going to mirror them later. Select polygons of the trousers and cut and paste them back to separate them from the rest of the model. As we did with the head use temporary morph map to rotate the trousers so the line marked in image is facing –X axis. Then apply new UV texture map, select SwordmasterUV and Cylindrical mapping along Y axis. Position the trousers polygons somewhere suitable in the UV map and use the Drag tool to readjust map and eliminate stretching.

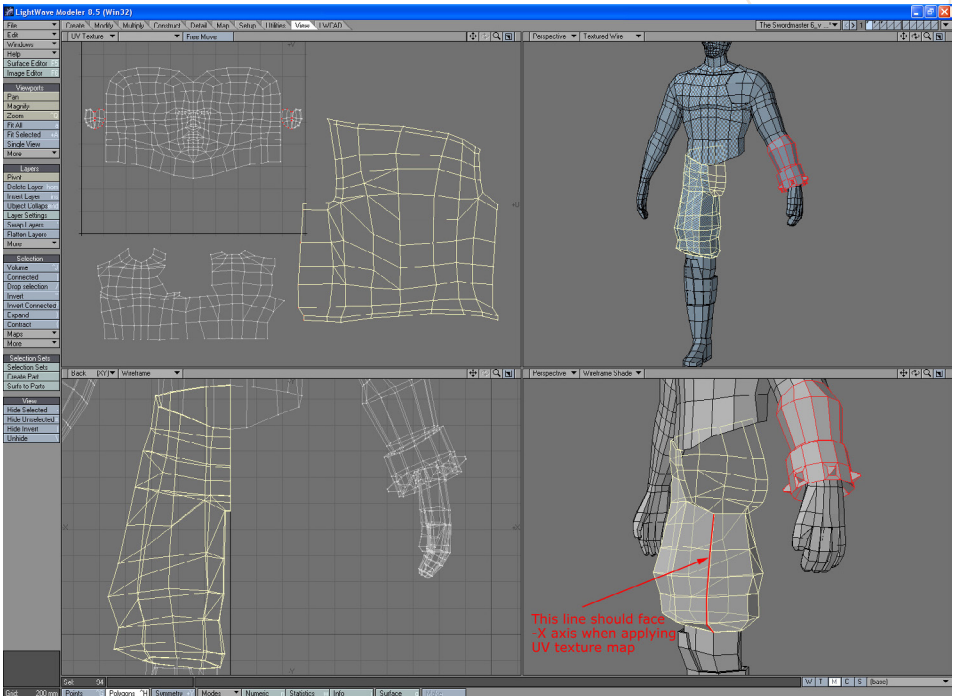


Fig18

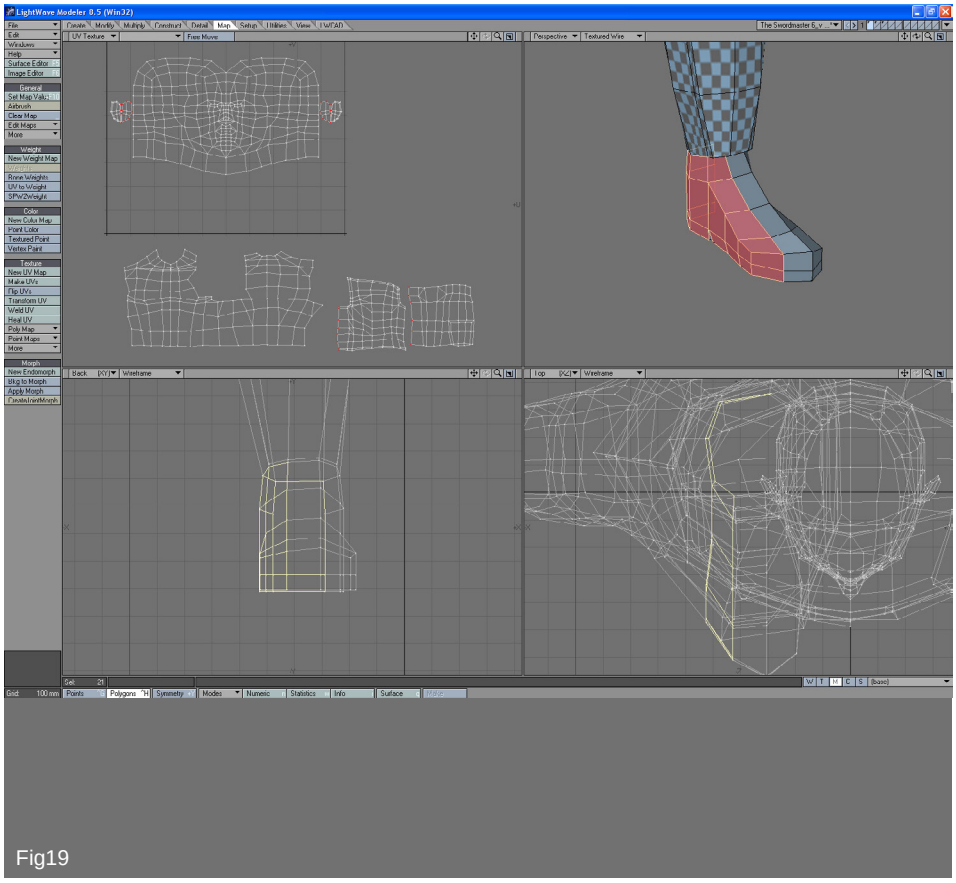


Fig19

19. Repeat the same procedure for the lower leg. To map the shoes, select one half of the model, cut and paste these polygons, reselect them and apply planar mapping along X axis. Then select the other half and repeat the same procedure.

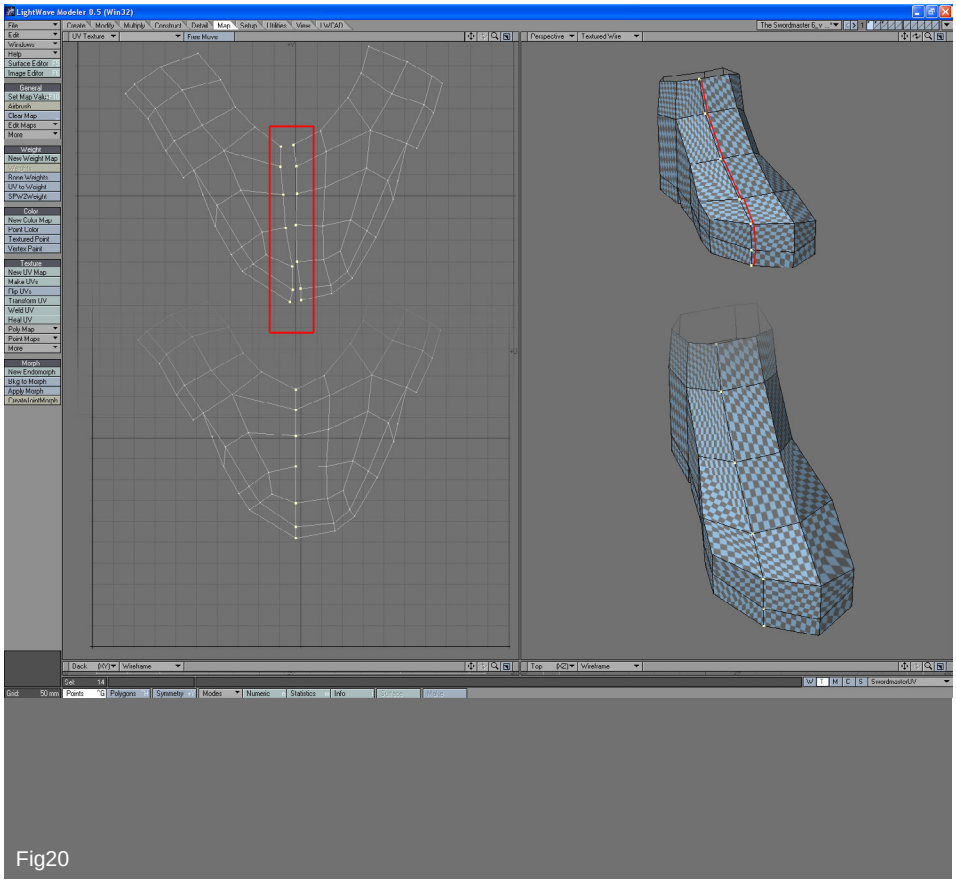
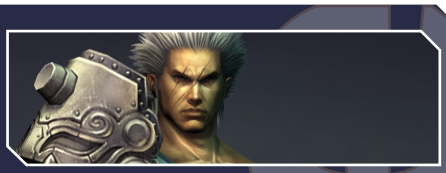


Fig20

20. Rotate and readjust UV map of the shoes to gain somewhat similar to the image. Select to top points in the marked area and stretch points to zero along U axis in the UV view and, then, repeat stretch along V axis. Repeat the same for the rest six point pairs. This will remove the seam on the front side of the shoes.



21. Now onto arms. Select model's right arm from shoulder to wrist and cut and paste polygons to detach it from the rest of the model. Use the temp morph map and rotate the arm so it's standing normally and its inner edge is facing –X axis (like in inset 1). Apply Cylindrical UV along Y axis like we did for trousers and lower leg.

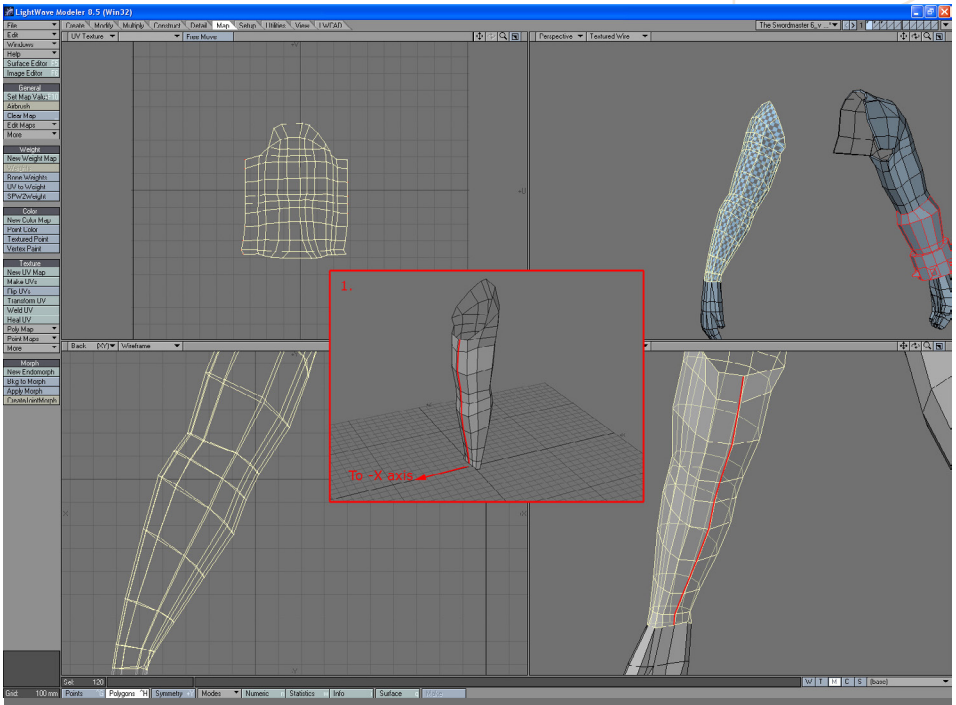


Fig21

22. Image shows seam lines of body parts that need to be UV mapped separately. Using techniques described above go along and UV map remaining parts.

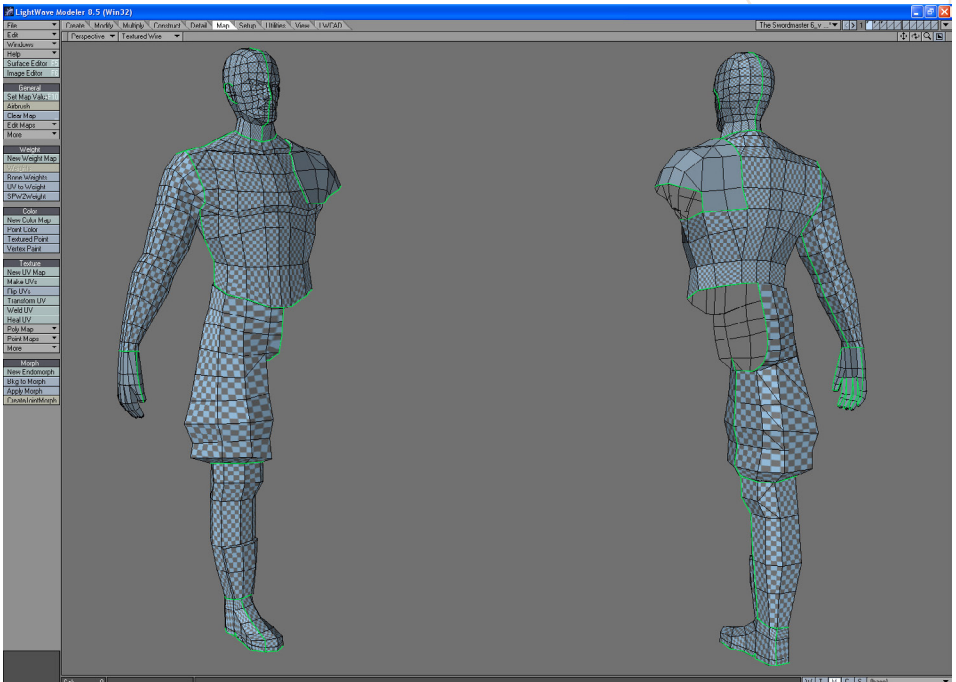


Fig22

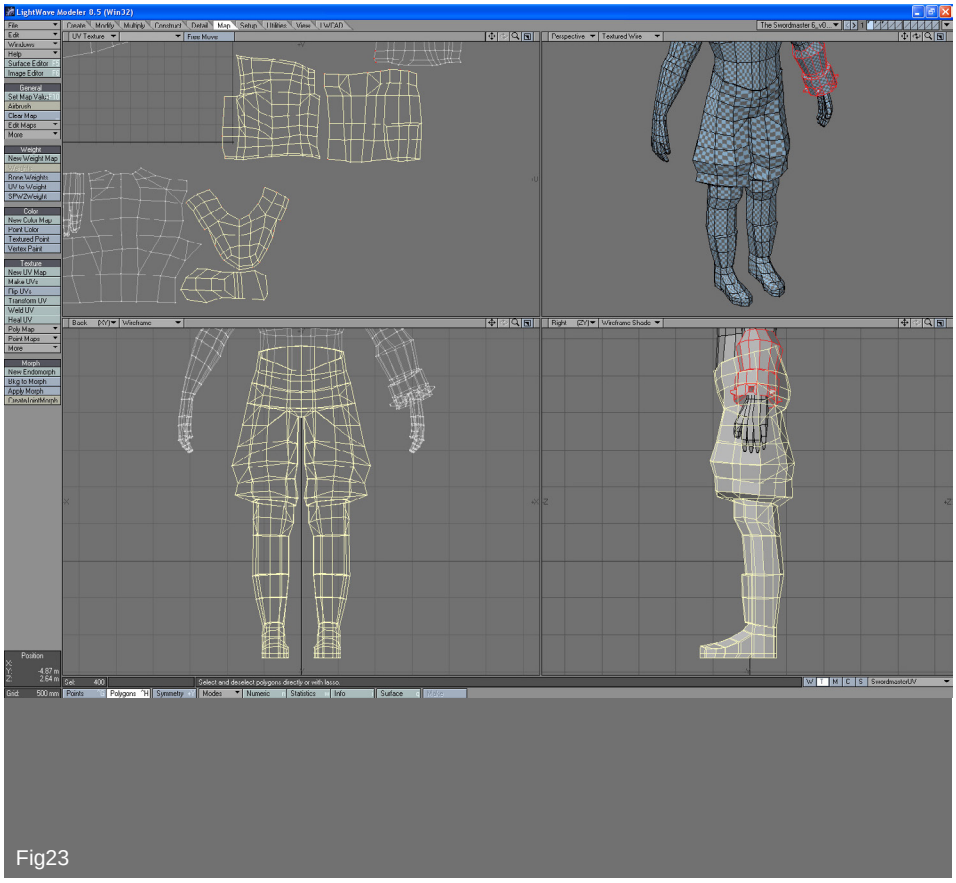


Fig23

23. Select all leg polygons and mirror them on the other side. Switch to the temporary morph map by clicking M box in the lower right corner and choosing its name from the drop down list. Select all leg polygons and go to Map-General-Clear map option to remove morph map from these polygons. Now hit “m” to merge points and attach leg parts to each other. If it happens that shoe UV gets messed up upon merging points it is because there is no UV on the bottom part. If so, select bottom shoe polygons before merging and apply planar UV mapping to it along Y axis and rescale and move these polygons in UV view. Then merge points and everything should be just fine.

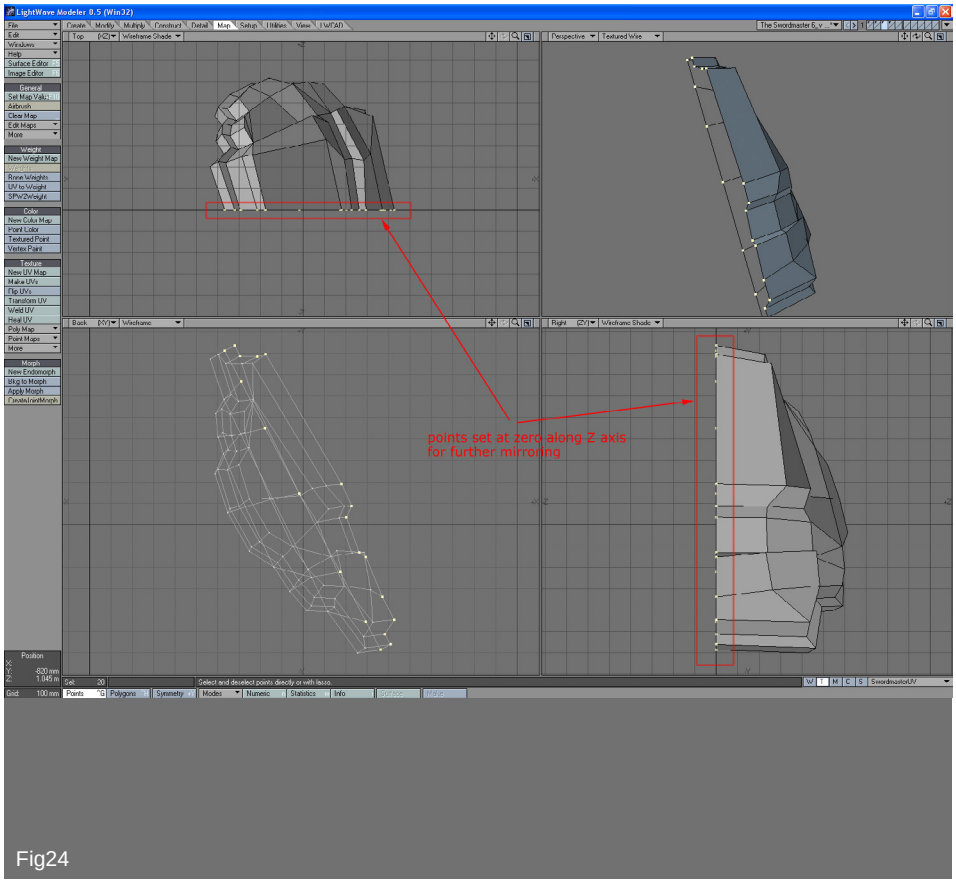
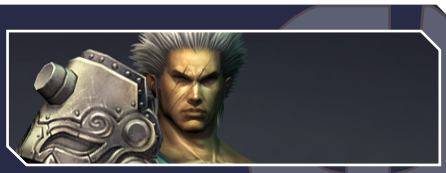


Fig24

24. Now we need to map armour pieces and we’ll start with the shoulder protection. This part is actually symmetrical so we are bale to map only one part and have other half automatically mapped. First, copy this part into new layer for future reference. We’ll be using morph maps for this part, but also we’ll alter original geometry, map it, mirror it and then place it back where it was. So, get back to original shoulder part, select it and hide everything else (“=”). Delete one half of the model and align middle points closest to zero on Z axis as you can. Then, select these middle points, hit “v” to bring up Set Value requester, check Z axis, enter zero for value and click OK.



25. Using temporary morph map rotate to align this part so it's facing –Z axis. Apply SwordmasterUV map using planar projection along Z axis.

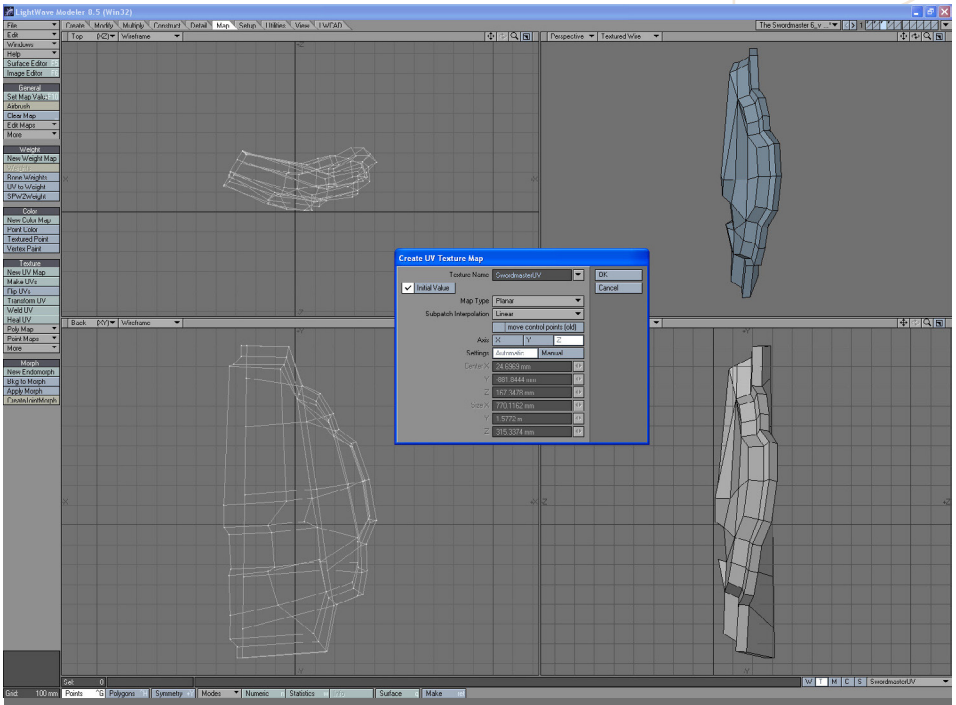


Fig25

26. Delete temp morph map from the model (Map-General-Clear Map) and mirror geometry along Z axis (be sure, merge points is activated). By using copy of this part from step 24 as a background layer reposition the part so it fits nicely with the rest of the model. To map the rest of the armour use methods described in previous steps. There is really no need to use anything new to accomplish this.

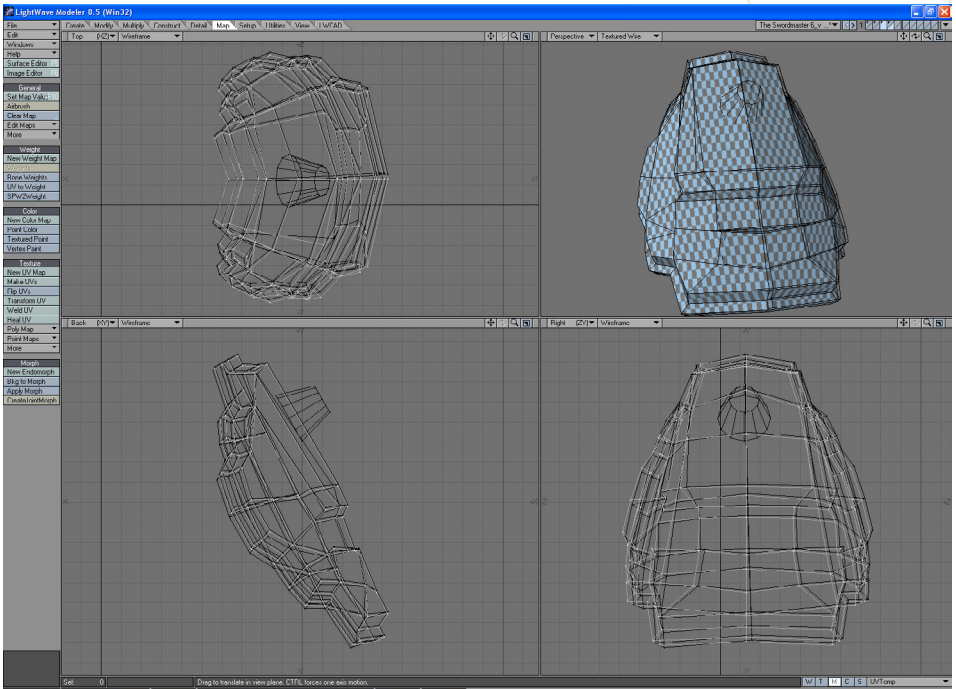


Fig26

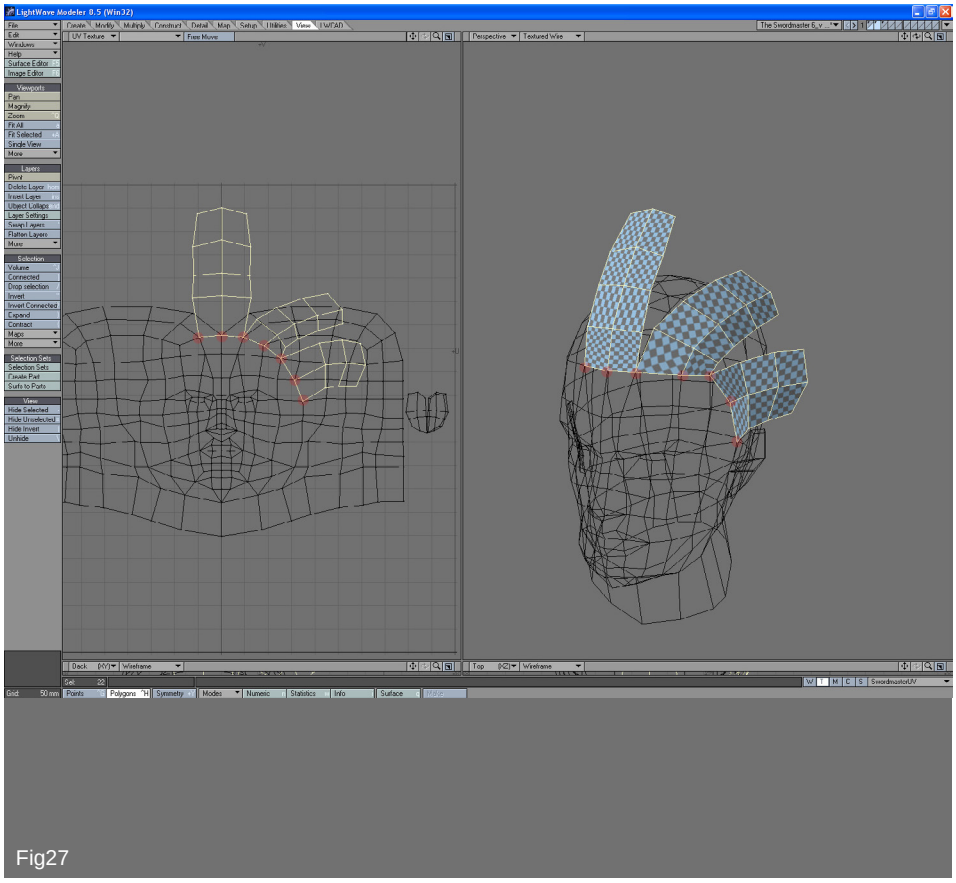


Fig27

27. When armour is completed we'll head onto hair mapping. Instead of making separate maps for each polygon group which will result in too much polygons in map and therefore taking too much space we'll group similar ones to preserve UV map space. Start with front 3 polygon groups on the forehead and apply Planar UV mapping onto them. In UV view, rearrange them and snap starting points (ones where hair meet the head) with their position in head.

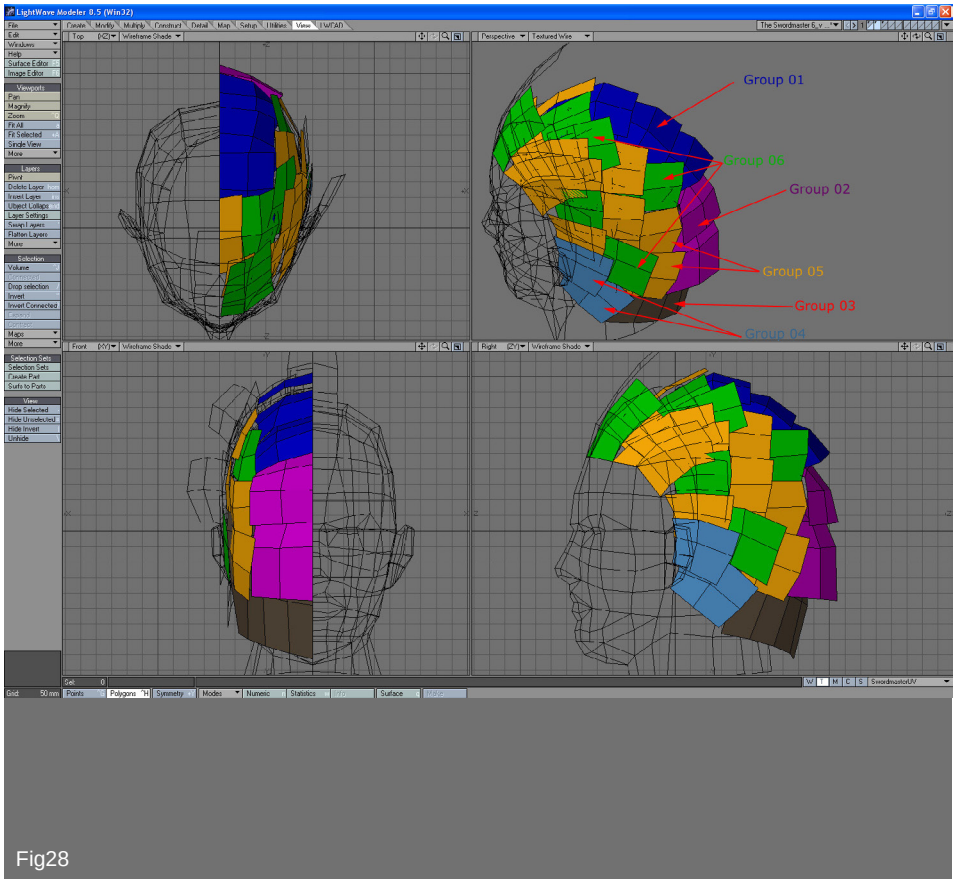
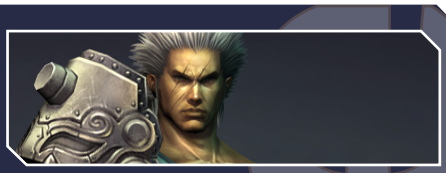


Fig28

28. Rest of the hair will be divided into 6 different groups according to their similarity. In the image you can see these groups given different surfaces so it's easy to distinguish them and they can also be easily selected using statistics windows ("w").



29. Select first group of polygons (marked blue) and apply UV map to them. Use transformation tools in UV view to roughly align polygons to each other. Switch to point selection mode and use U and V axis stretching to align points of each other into same place. Use this technique on rest five groups and you can see in image final result of this effort. Now we have all hair polygons mapped, a lot of UV space is preserved and there will be less to paint later.

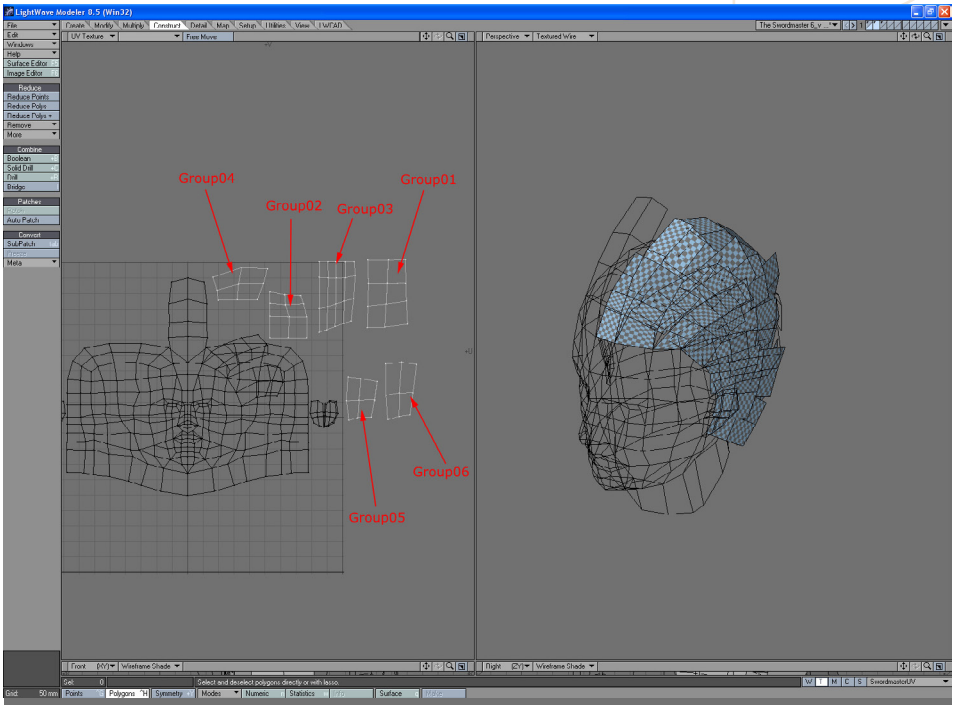


Fig29

30. In UV view select all 6 groups and mirror them along X axis. Do the same for the two front left groups mapped in step 27.

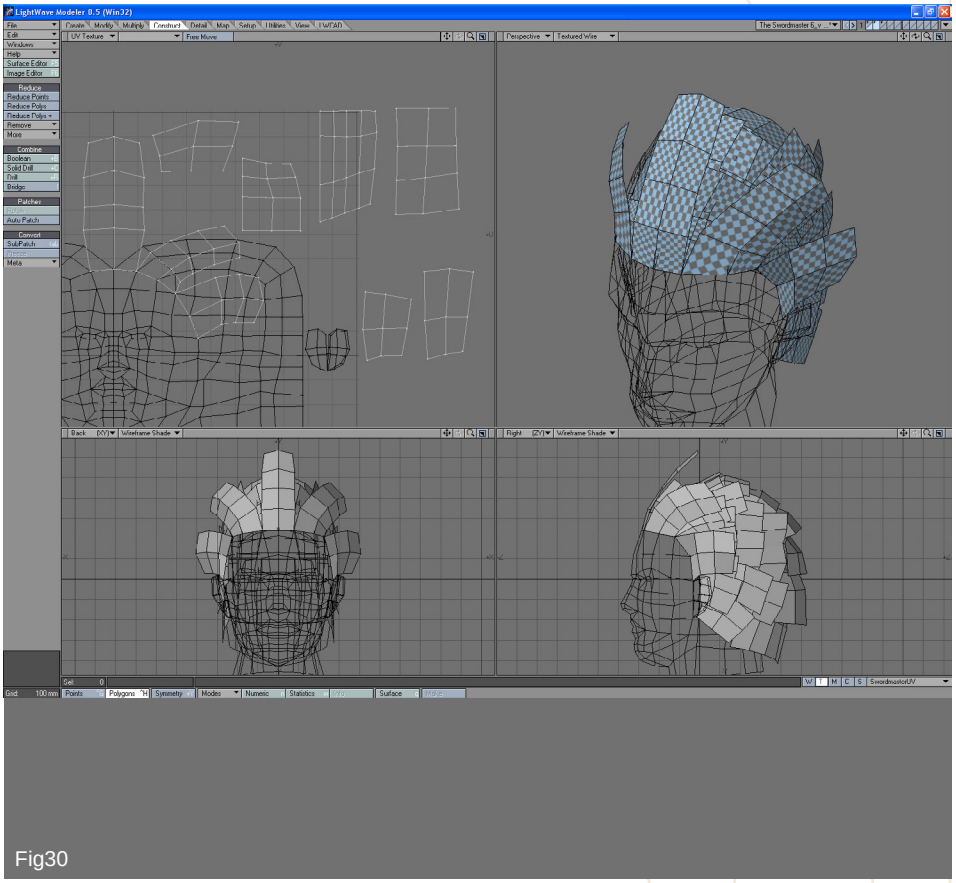


Fig30

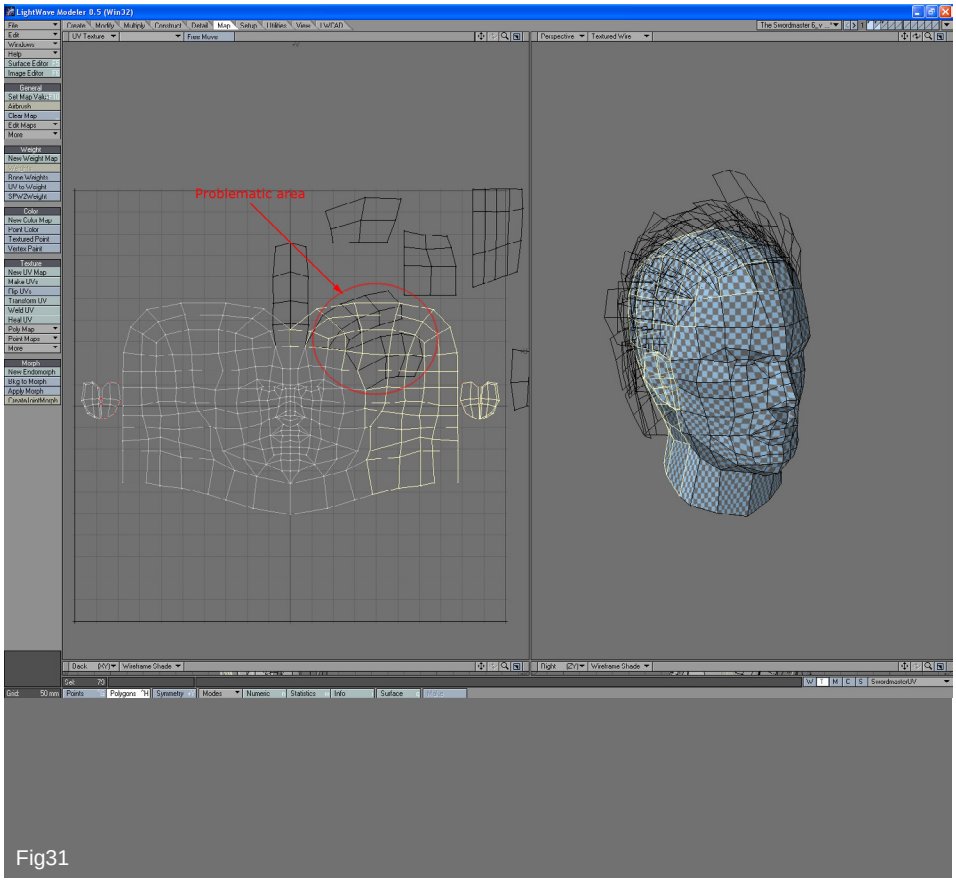


Fig31

31. As you can see there is a certain overlapping of head and hair polygons as it's marked in image. Since this space can be used in better way, we'll half head map as left and right sides are similar. So select polygons marked in image and delete them.

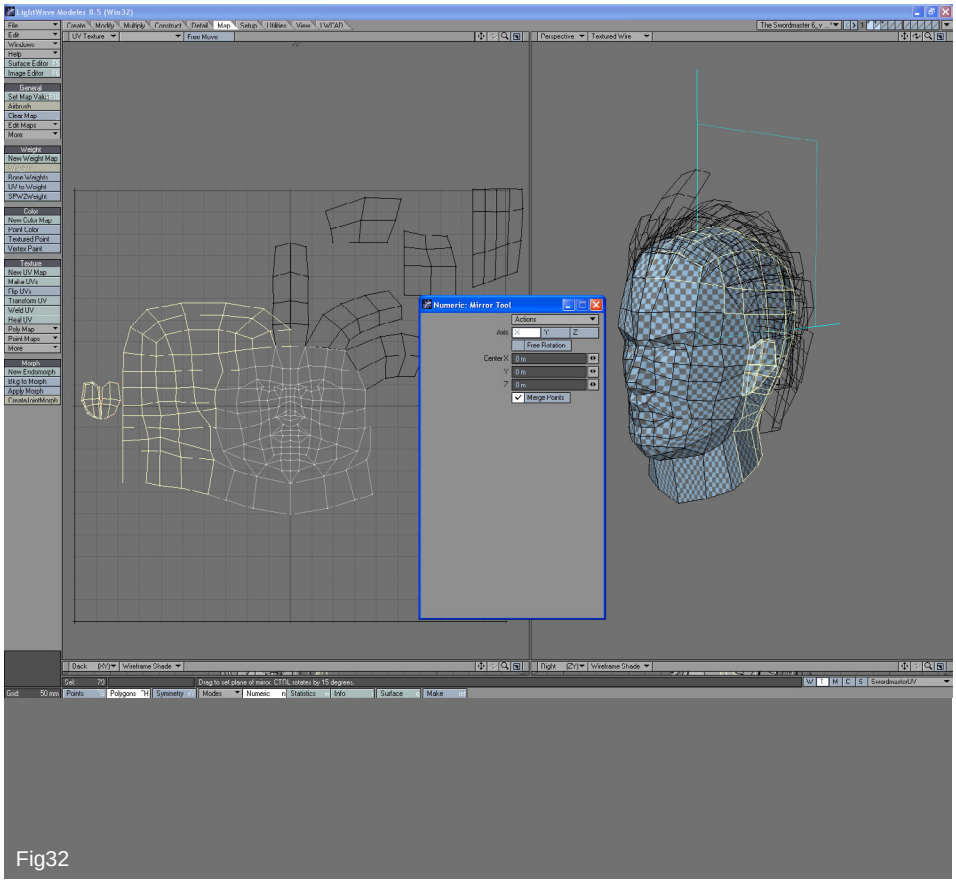
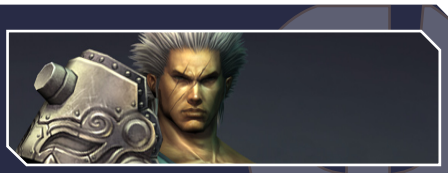


Fig32

32. Select head polygons on the opposite side of deleted polygons and mirror them to restore model. This might cause some minor problems in UV map, but these areas are located under the hair polygons so it makes no harm.



33. Cut hair polygons and paste them back into layer where the head is located. Use stretch tool to align front hair points with ones on the head model (marked red in image). Rearrange UV parts for better space usage.

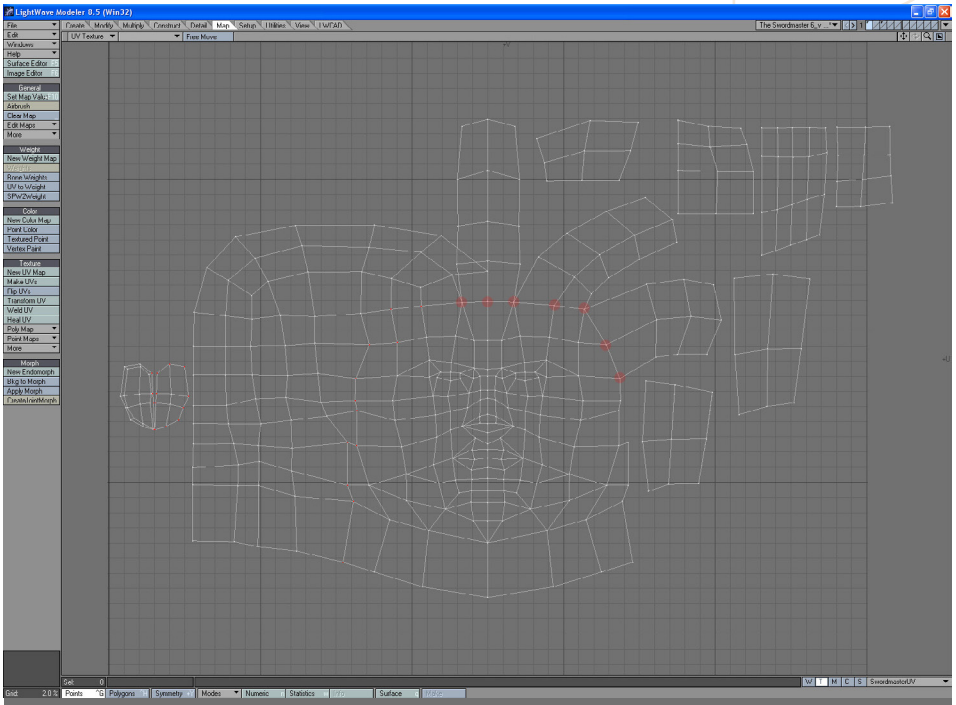


Fig33

34. Rearrange UV parts so they better fit into UV square and use File-Export-Export Encapsulated PostScript to export UV map to a vector format so it can be used later in painting software.

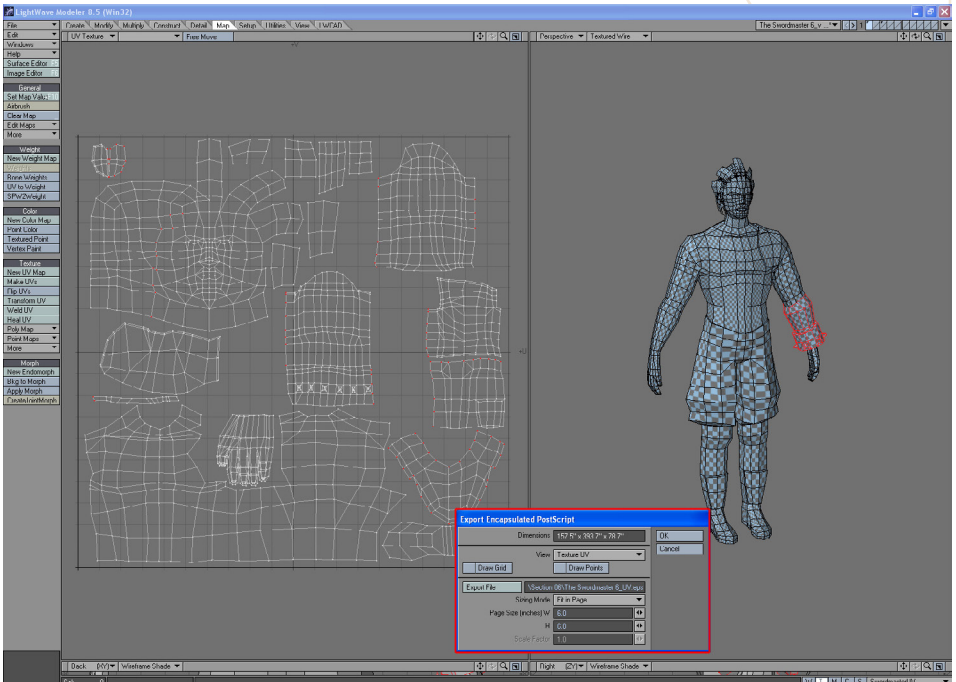
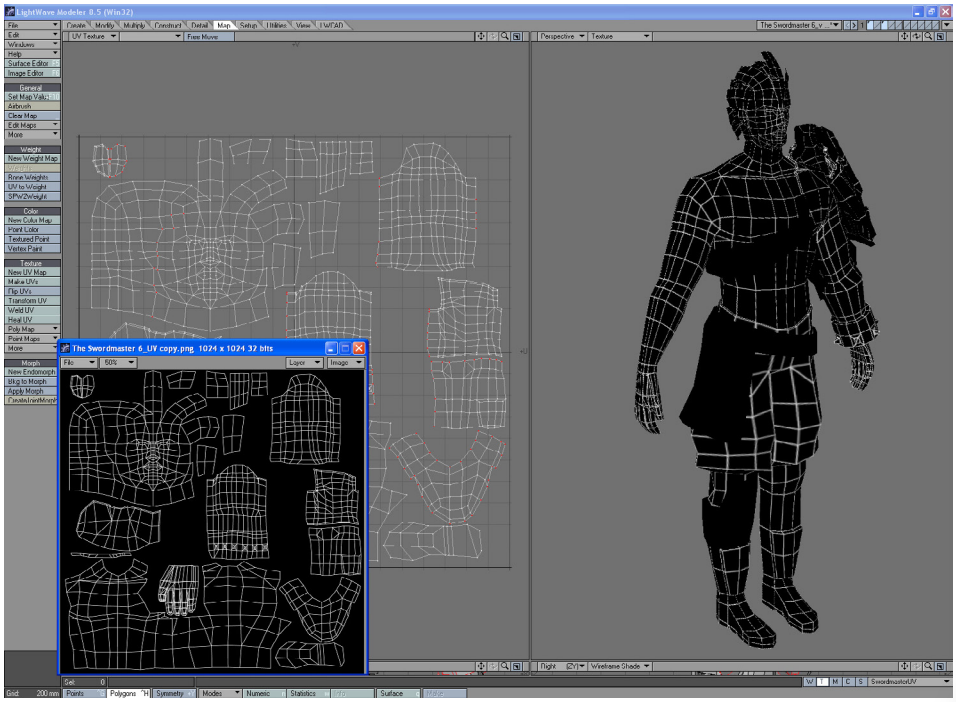
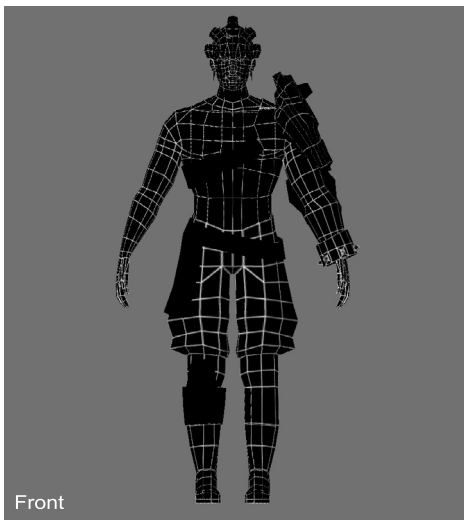


Fig34







35. Select all polygons and hit “q” to assign same surface for the whole model. Load in image of UV texture (you will need to convert it from .eps into some raster to load it in modeller) and apply it instead of checkerboard image.

This concludes UV unwrapping and mapping section. It came as a long one, but UV mapping is tedious process and usually requires a lot of tricks in your pockets to get everything right. I hope you learned much from this section, as most people don’t like or understand the UV mapping process. Next month we’ll begin the last stage of this tutorial and that would be painting.

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The Swordmaster

Maya

Is our new precise, step by step tutorial for highly polished, low polygon game character with detailed texturing for real-time rendering. We have had the tutorial created for the 5 major 3d applications, but even if you are not a user of one of them, the principles should be easily followed in nearly all other 3d applications. Over the next 8 months we will outline in detail the process for creating the 'Swordmaster' you see on the left. The schedule for the different parts of the tutorial is as follows:

Issue 009 May 06

Modeling the Head

Issue 010 June 06

Modeling the Torso

Issue 011 July 06

Modeling the Arms & Legs

Issue 012 August 06

Modeling the Clothing & Hair

Issue 013 September 06

Modeling the Armour

Issue 014 October 06

Mapping & Unwrapping

Issue 015 November 06

Texturing the Skin & Body

Issue 016 December 06

Texturing the Armour & Clothing

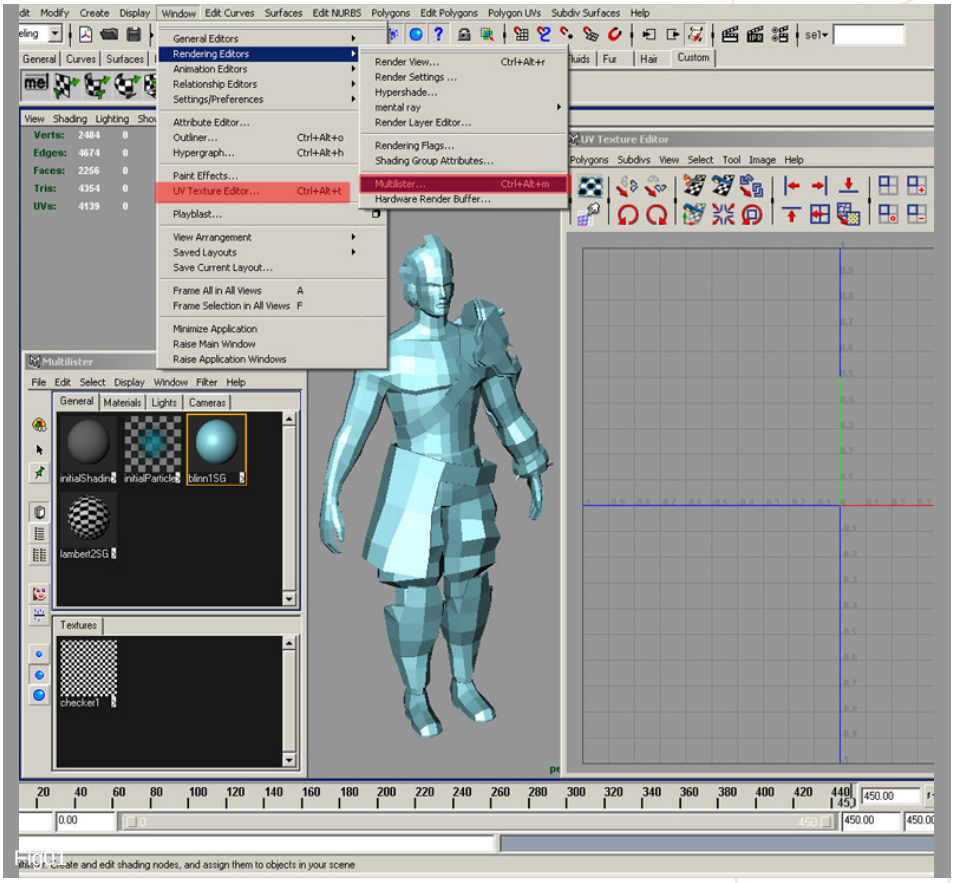
Enjoy ...

Part 6
Mapping & Unwrapping

Introduction

Hello everybody. UV mapping and unwrapping is the bridge between modelling and texturing. I hope you had a good time modelling and your character is now in a perfect shape ready for this part of our tutorial. This part is bit longer than other parts but your effort will be finally rewarded when you'll learn how to use lots of new tools such as: UV Texture Editor, planar, cylindrical and spherical projections, sew and cut UV's, how to move UV's, how to transfer UV's from one object to another similar one, how to relax UV's and many more. Because I've wanted to stop this tutorial from being to long I will present only the most important aspects of UV mapping without paying to much attention or even jumping on small details that are easy to be use. Nevertheless at least I will mention the tool I have used for a particular operation.

1. Getting back to work I would like to present first the main tools which are going to be used in this part of our tutorial: "UV Texture Editor" and "Multilister". During the entire texturing process these two are our most important tools. (Fig01). In the "Multilister Window", which is, at this primary level, very much similar with the "Hypershade Window" (for those of you guys that are already using "Hypershade" instead of "Multilister"), we are going to create "Shading Groups" or short name "SG", which are also known as "materials". SG's are containing all information about the way a render engine like Maya Software, Mental Ray, etc, must calculate what's happened when rays of light or photons, etc, coming out from a source of light, are intersecting pieces of geometry. In SG is stored all informations which will lead us to the transformation of a geometry in "Glass", "Steel",



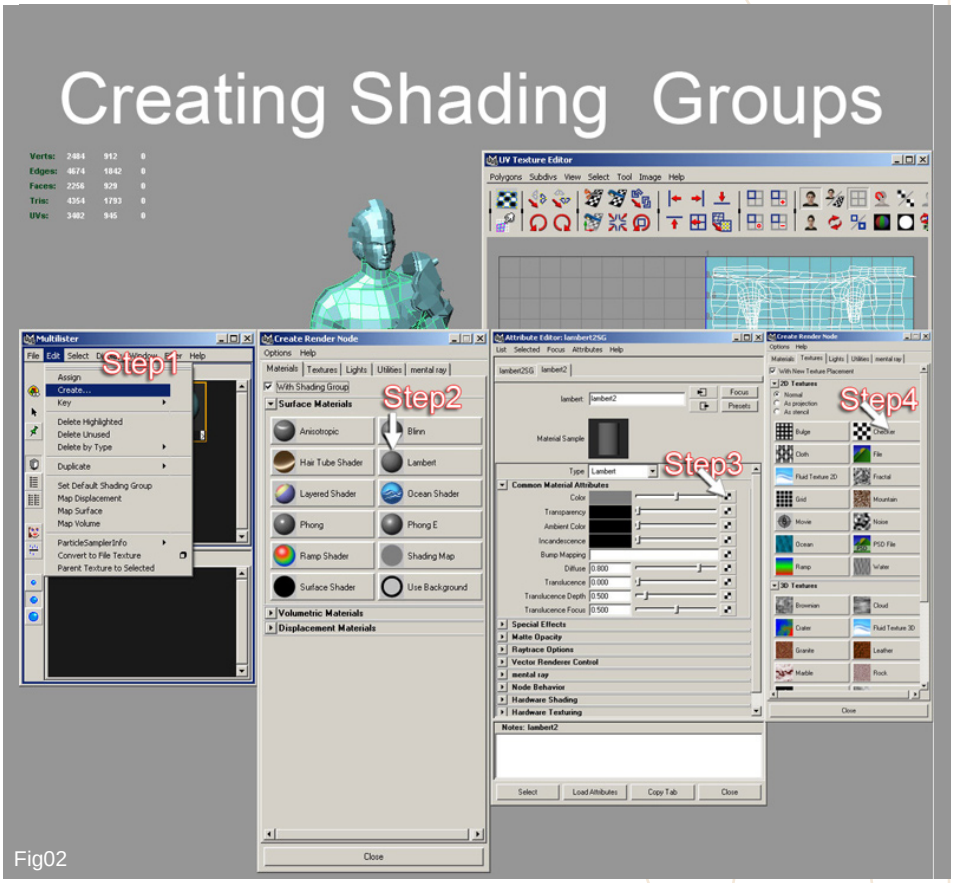
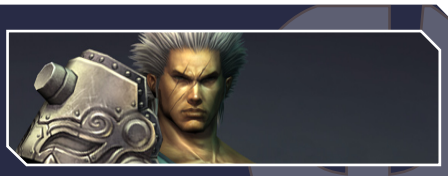


Fig02



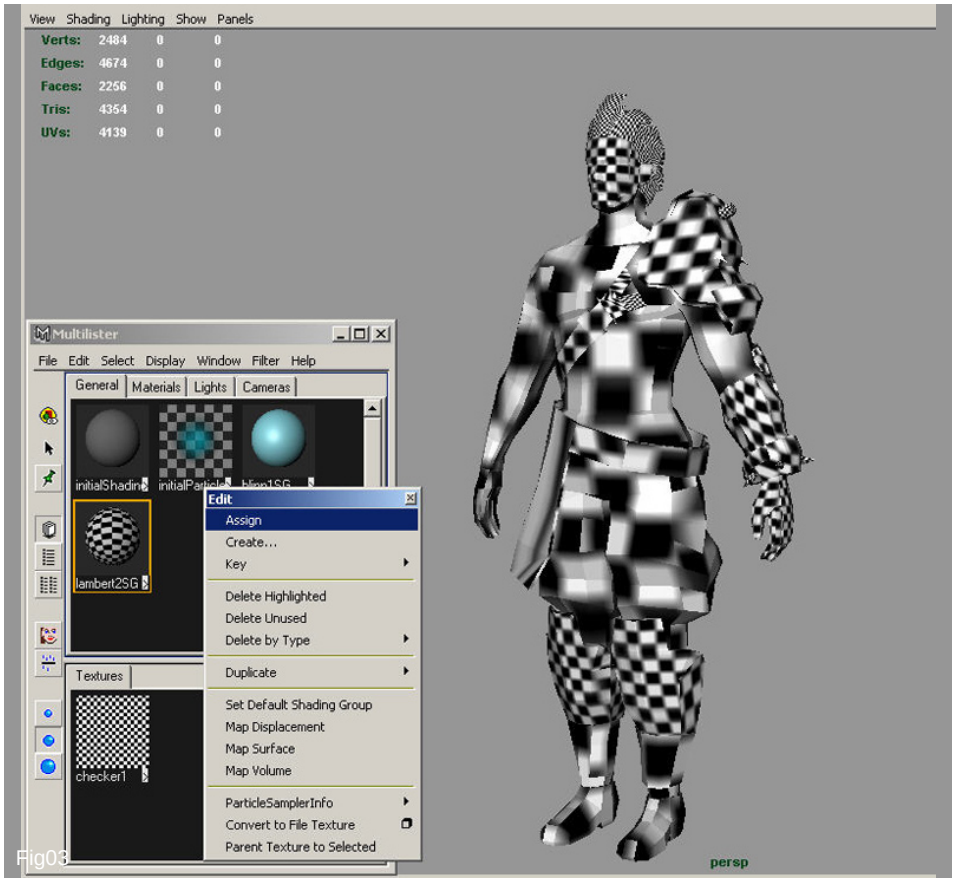


Fig03

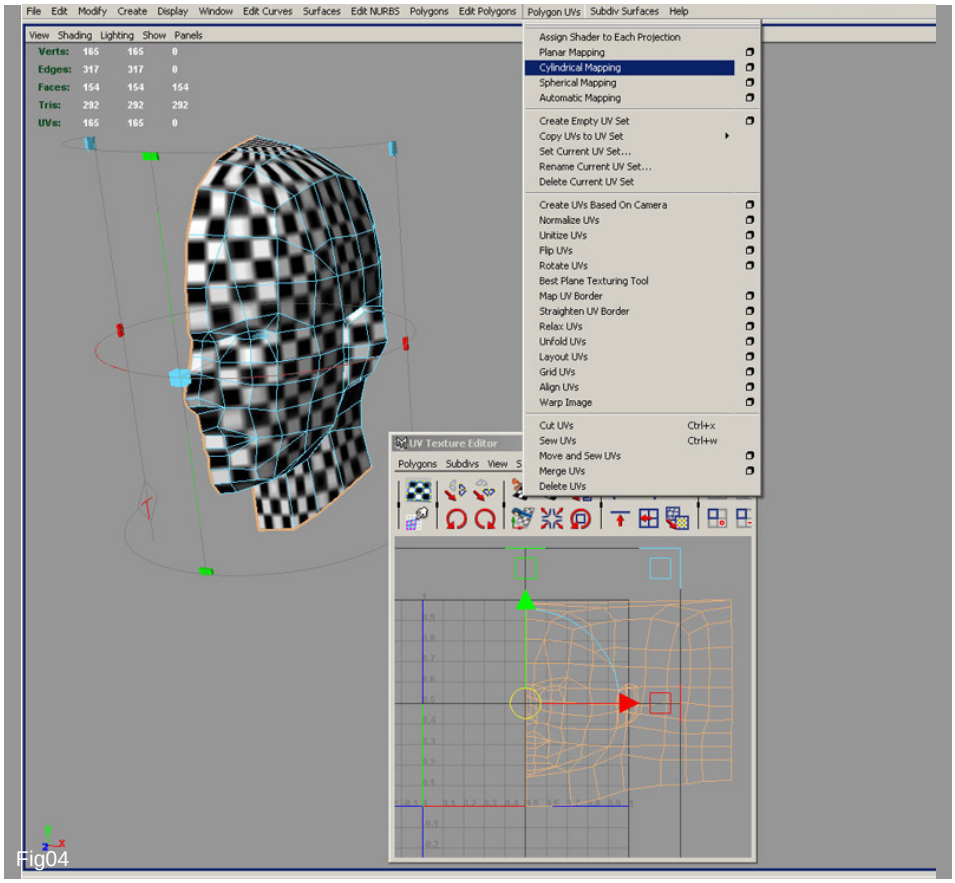


Fig04

"Chrome", "Wood", "Mirror" and so on. But as long as we are focusing on creating UV's and textures for games this aspects is not important for us. We are going to use SG just to assign a texture and this part will be fully described in our present and next tutorial. In "UV Texture Editor" we are arranging the UV's using cut, sew, relax, move and sew, tools and many more. In the "UV Texture Editor" window a 3D dimensional XYZ piece of geometry is unwrapped in a 2D UV flat map. So this operation is very important for us in order to obtain a nice wrapping of a 2D painted texture on a 3D object. Everything must be proportional scaled for example: the most important parts of the geometry like face, torso, armour, etc we are going to reserve more space in our texture because it is very ease to see. But for hidden places which can't be seen to often we are going to leave less space. Above all these, in the end, everything must fit in the upper right part of the "UV Texture Editor" window and that's going to be a nice puzzle!

2. Now we are going to create a new SG, assign a checker file as texture and assign the new formed SG the our warrior. In Fig02 you can see four steps to create a SG with a checker. Step 1 - create render node option. Step 2 - choosing material, "Lambert" in our case. Step 3 - assigning a texture file as colour. Step 4 - pick the Checker file from the list. The idea of choosing checker is that the squares will show us any stretched parts of the geometry. On the other hand we can arrange the UV's to be somehow close to a proportional stretching so the texture should not be very much accumulated in one part and too stretched on another part.

3. Assign the texture to the geometry. Select the new created SG in "Multilister" and assign this to the entire geometry. Now you can see very easy how stretched or dense is the texture in different parts of the body. So, this is pretty bad and we are going fix this. You may encounter

funny things like some portions of your geometry are not showing any texture on it. Just perform an “Automatic mapping” over it and assign the material one more time. (Fig03)

4. I am going to start making the UV’s from top to bottom maintaining as much as I can the symmetry around the Y axis of the swordmaster. This way I am going to map only half of the body and later I am going to transfer my UV’s from one half to another. I can do this because during the entire modelling process I kept the Y symmetry. In fig Fig04 the head: select the half of the head and apply a “Cylindrical Mapping” projection as shown in the image. As you can see we are having manipulators that are very useful for moving, scaling and rotating the entire projection. Also there is a red “ T “ on the lower left corner of the projection. By clicking on it will transform the cursor in a very similar one to the cursor from extrude tool. I strongly encourage you to move the cursors and to watch the transformation of the UV’s in “UV Texture Editor”. To delete the current UV set, go in “UV Texture Editor” window and Polygons > Delete UV’s. This way you can start all over again if you until you are completely pleased with the result of your actions. I’ve made a small move of my UV’s along the X axis and I got a much better arrangement of my UV’s.

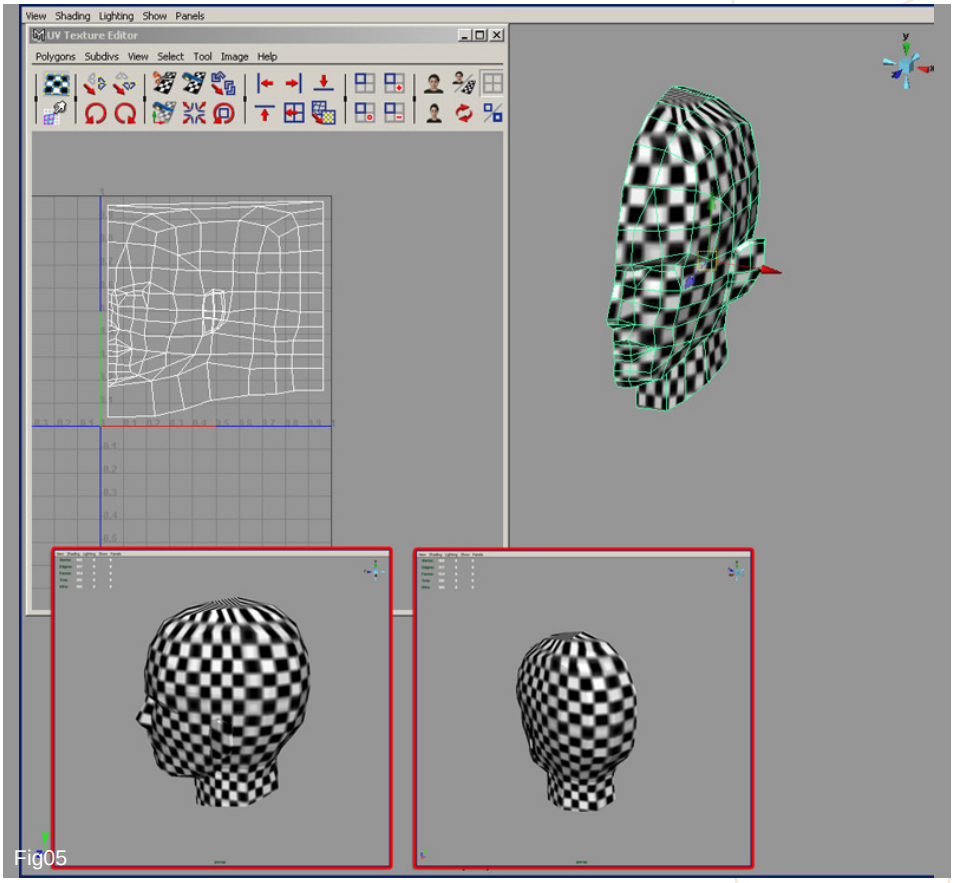


Fig05

5. As you can see the “Cylindrical Projection” we chose is almost perfect for wrapping the texture around the head. Though on the top of the head we are having some stretch that we must fix Fig05. Also you have may try later to use also “Planar Projection” or “Spherical Projection” for the head. But I have chosen this one because it is very simple for me right now. As you can see I have to make some small adjustments onto the top of the head because I have a little bit of stretching there. And that’s what I’m going to do next step.

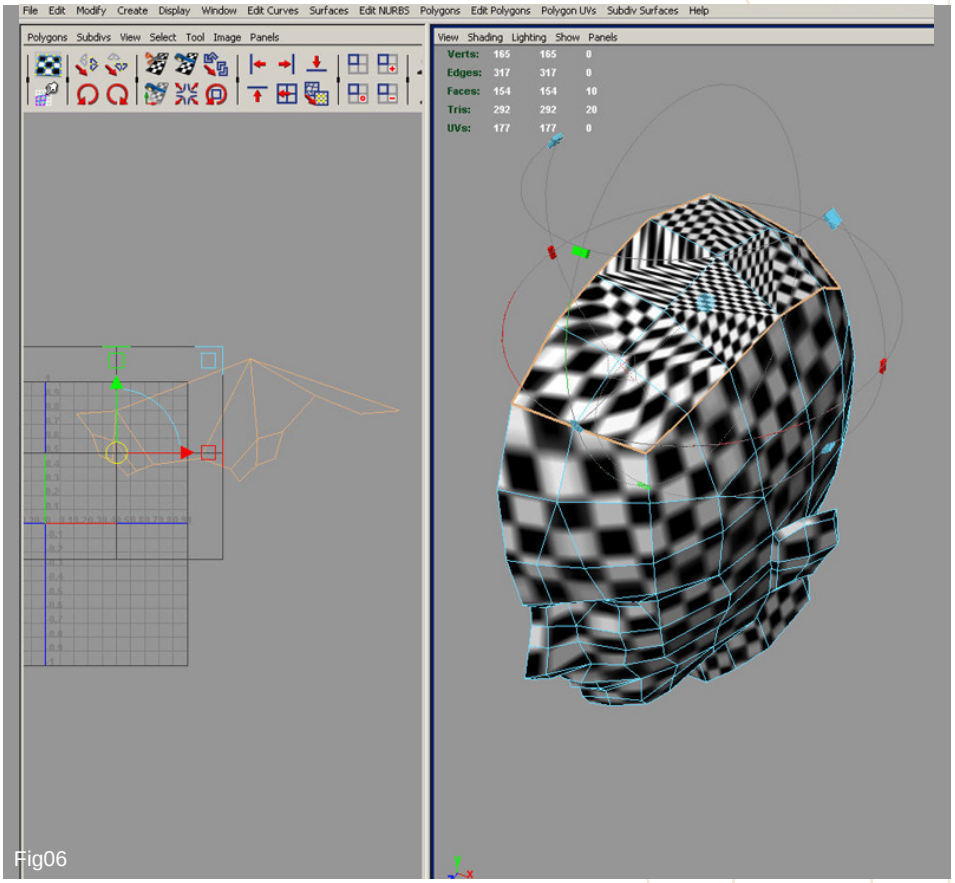
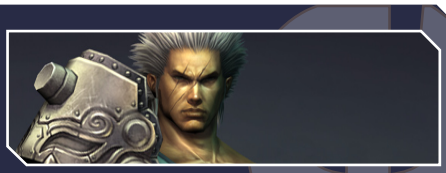


Fig06

6. Selected the stretched 10 polygons from



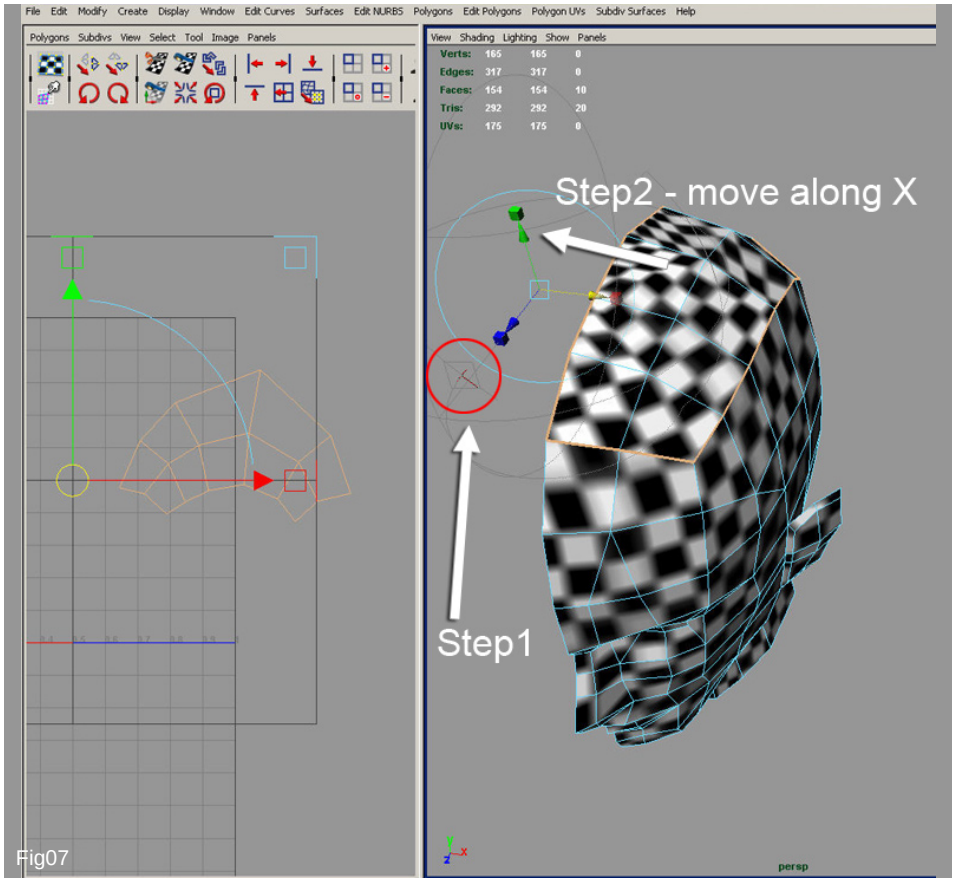


Fig07

the top of the head and apply a “Spherical Projection” as in Fig06.

7. Now in the “perspective” window click on “ T “ manipulator as shown in Fig07 (Step 1) then move along X direction (Step 2) until it seems to fits with the rest of the head. Now we’re going to fit perfectly by sewing those two parts in “UV Texture Editor” window.

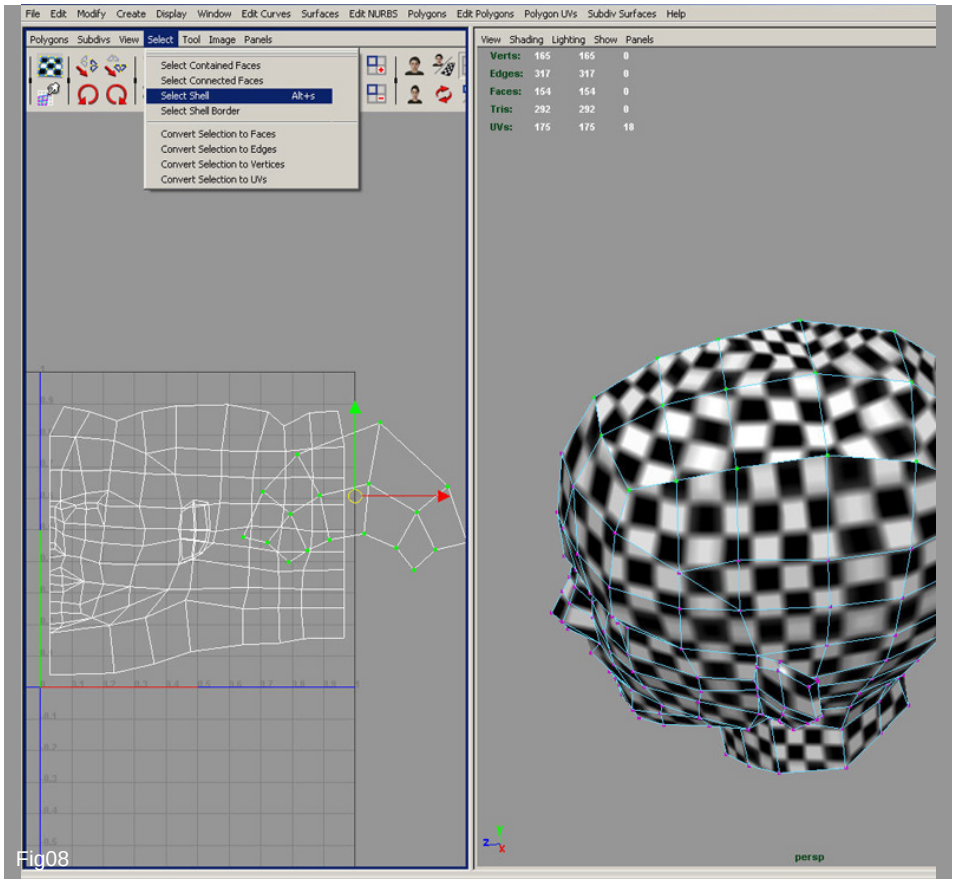


Fig08

8. Push the right click button in “UV Texture Editor” window an choose “UV” option. Now select one UV from the spherical projected faces. Next the menu Select > Select Shell. This will select the whole shell containing the spherical projected UV’s. (Fig08)

9. In “UV Texture Editor” window move the whole shell on top of the rest of the head and rearrange the UV’s one by one as in Fig09.

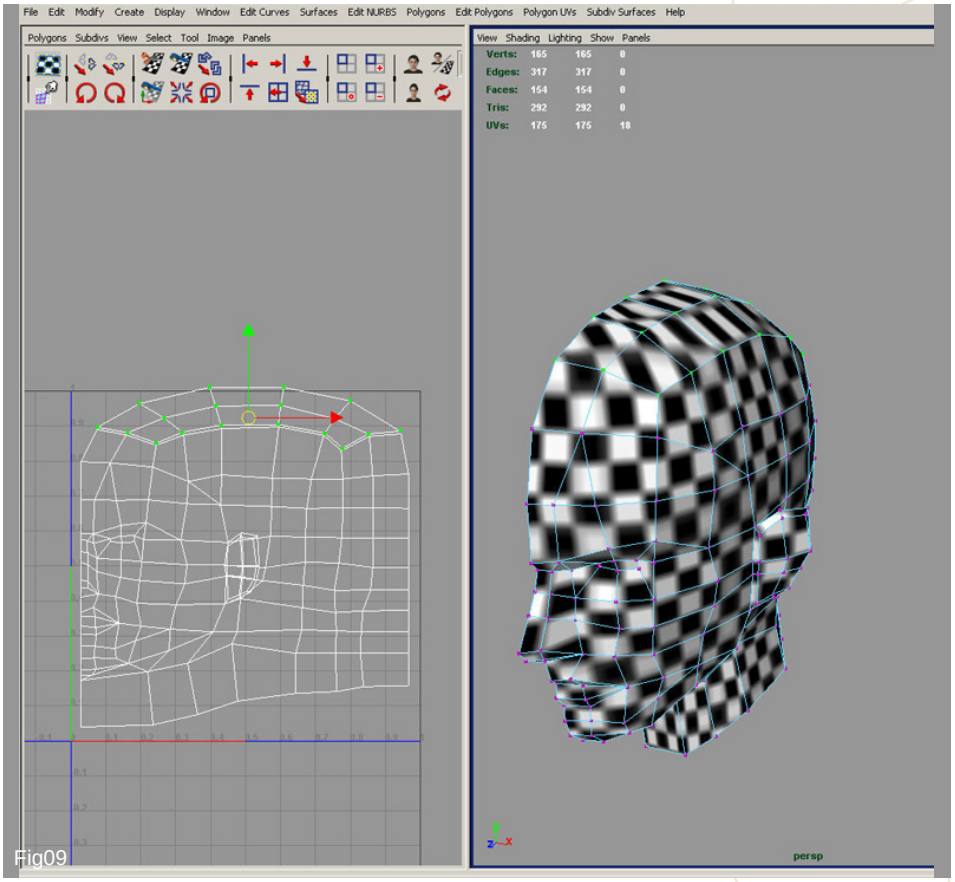


Fig09

10. Right click in “UV Texture Editor” window choose “Edge” option then select the bottom row of edges from the spherical projected faces. You will notice that the other row of edges from the head will autoselect. This option is very useful especially when you have many small part of UV’s and you don’t know where it belongs. So once you will select one edge the one connected to it will be also selected automatically. Now sew selected edges by pushing the sew icon or from the menu as shown in Fig10.

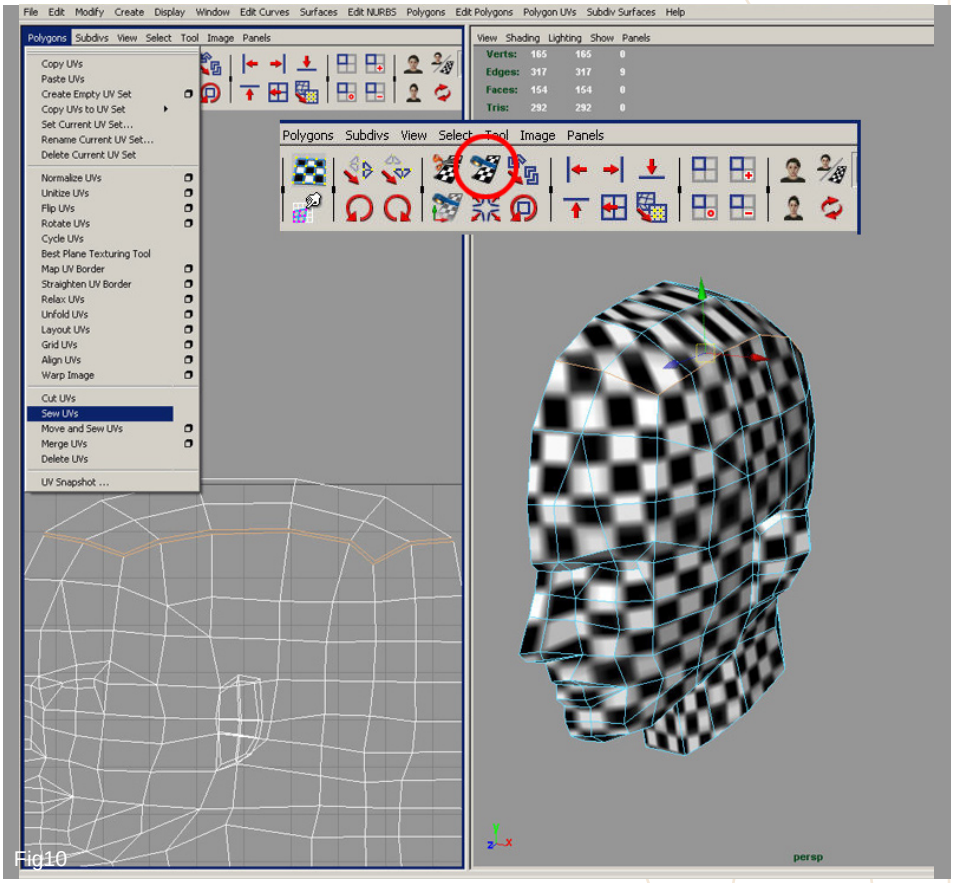
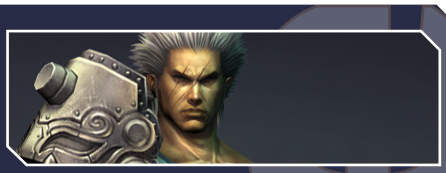


Fig10



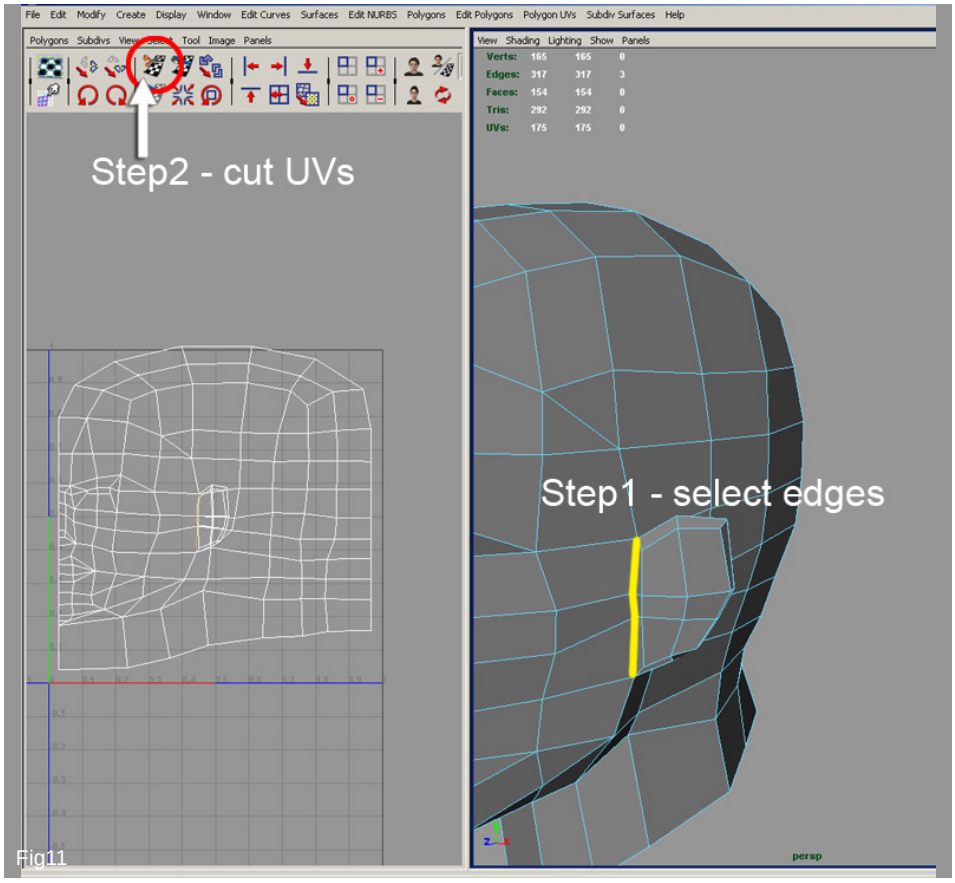


Fig11

11. Now we must arrange the UV's from the ear. First we have to detach the ear's UV's from the rest of the head's shell. In Fig11 (Step 1) select the edges you want to detach. Step two in "UV Texture Editor" window "Cut" the selected UV's. Now select the whole shell of UV's from the ear and move it in a different position.

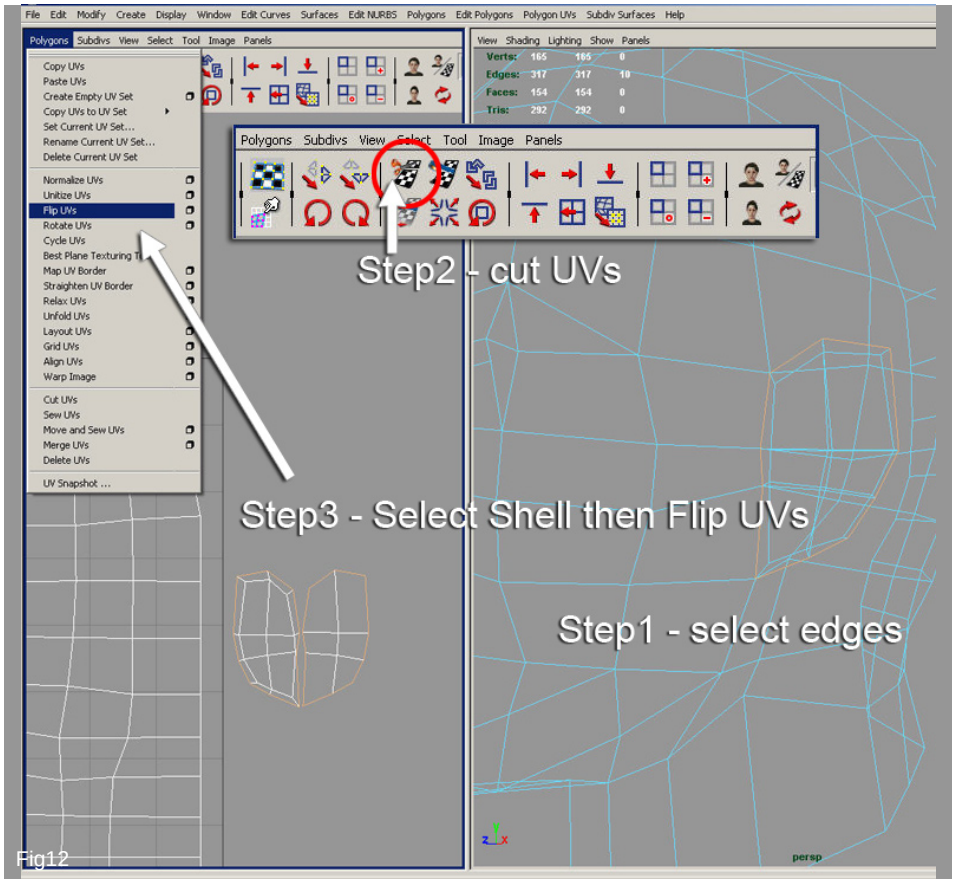


Fig12

12. In Fig12 we have to select now the entire row of edges which is separating the back from the front of the ear (Step 1). Cut the UV's (Step 2). Select one shell of UV's and use Flip UV's tool to mirror the shell onto the other side (Step 3).

13. Even if we've been detached the UV's from the head's shell we cannot sew those two shells because they are still connected to the head. Notice that if you will select the edges from the ear there will be also auto selected the edges from the place where was the ear initially connected. So, I am going to detach the ear from the head, making it an independent piece of geometry, then apply a "Cylindrical Projection" over the ear. Now I can sew the shells from the back and from the front of the ear following the same steps as I did before.

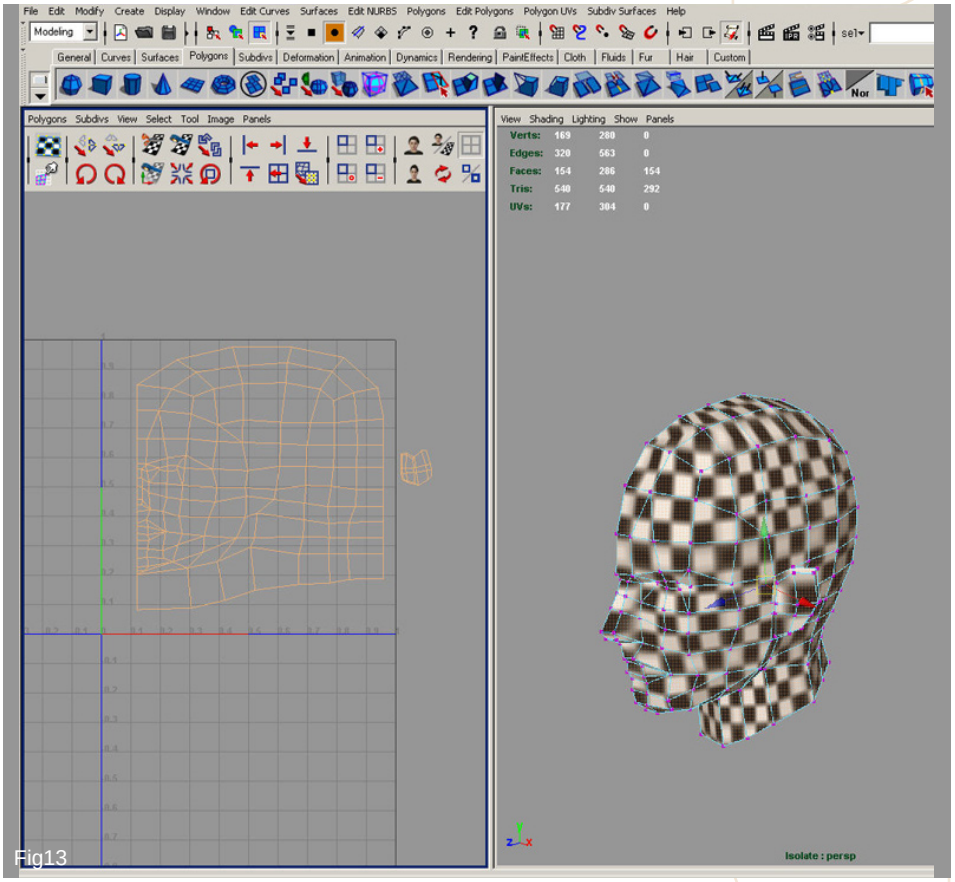


Fig13

14. Now we've finished the head. Duplicate the geometry for both head and ear. To transfer the UV's from a piece of geometry to another select the half of the head with the UV's then select the other half of the head. Now choose from the menu: Polygons > Transfer. And you should have now same identical UV's for both parts. merge those two halves in one single head and then sew the UV's as in Fig14 highlighted in yellow. The same technique must be using for the ears without connecting them.

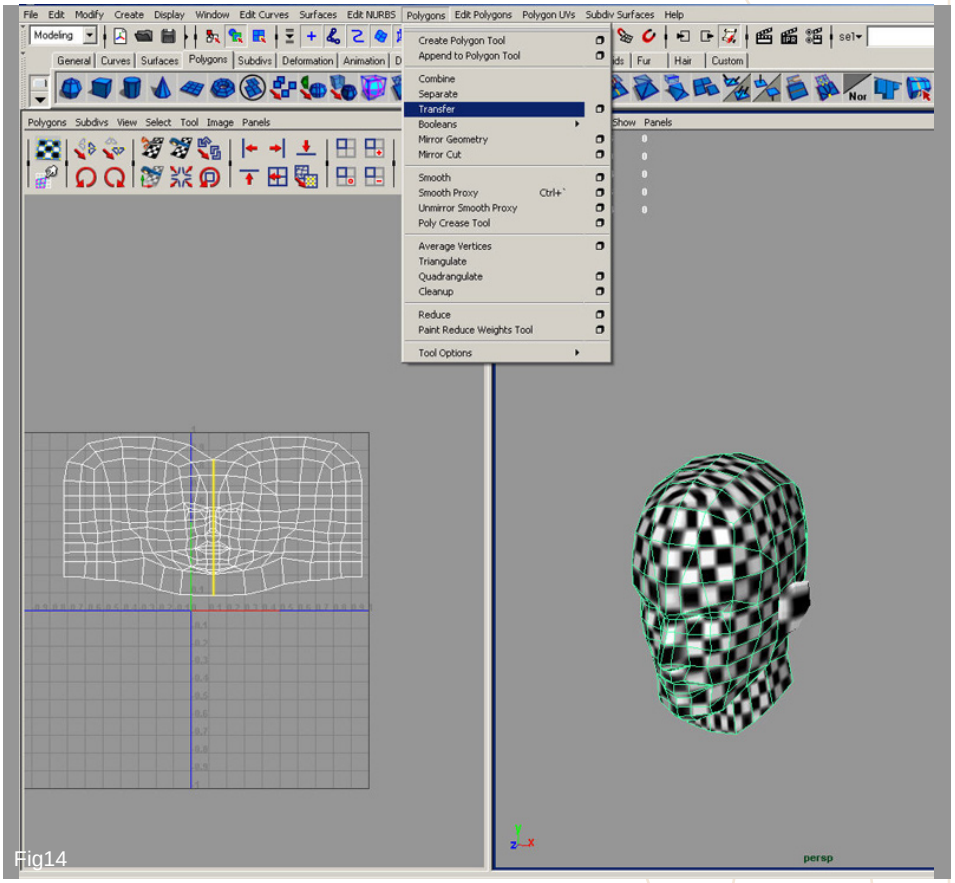
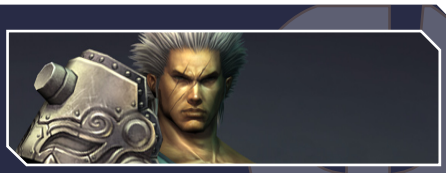


Fig14



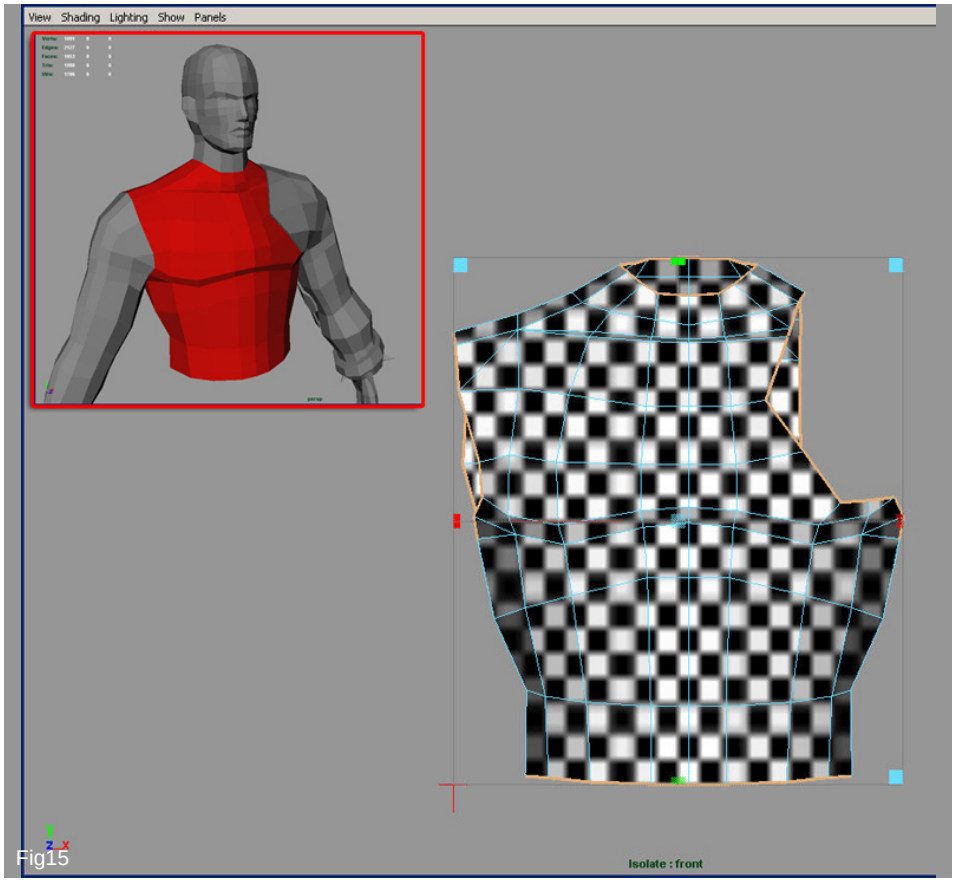


Fig15

15. Now it is time to move onto the torso. Select the body as highlighted in red in Fig15 and apply a planar projection. Notice that I have separated the torso from the rest of the body. We cannot work on the half of the body because it is not symmetric along the Y axis.

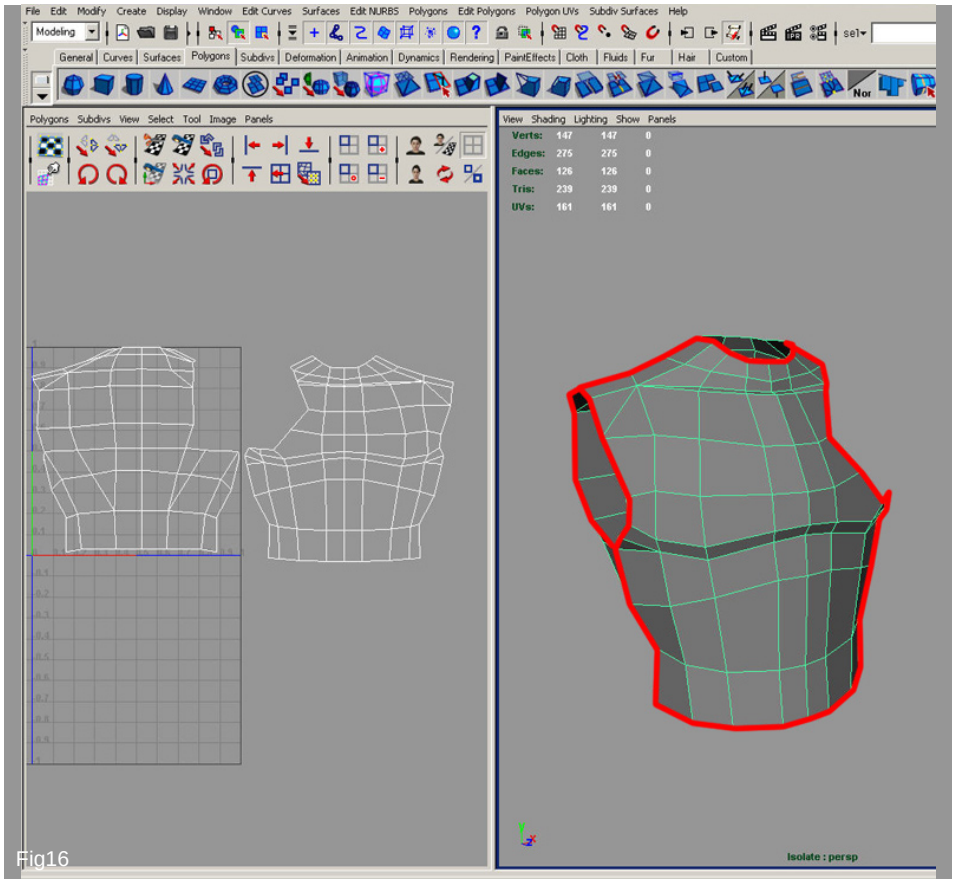


Fig16

16. Following exactly the same procedure as I did for the ear split the torso's UV shell in two front part and back part using "Cut UV's" tool. Then flip one shell of UV's as in Fig16. And next step is to weld those two parts.

17. Select the edges as we did for the head and sew the UV's as highlighted in yellow in Fig17. Also take care about stretching areas and rearrange the UV's until you have a smooth texture wrapped around the torso. Also if you want or if you fell like it would be much easier for you, you may use another planar projection for the shoulders.

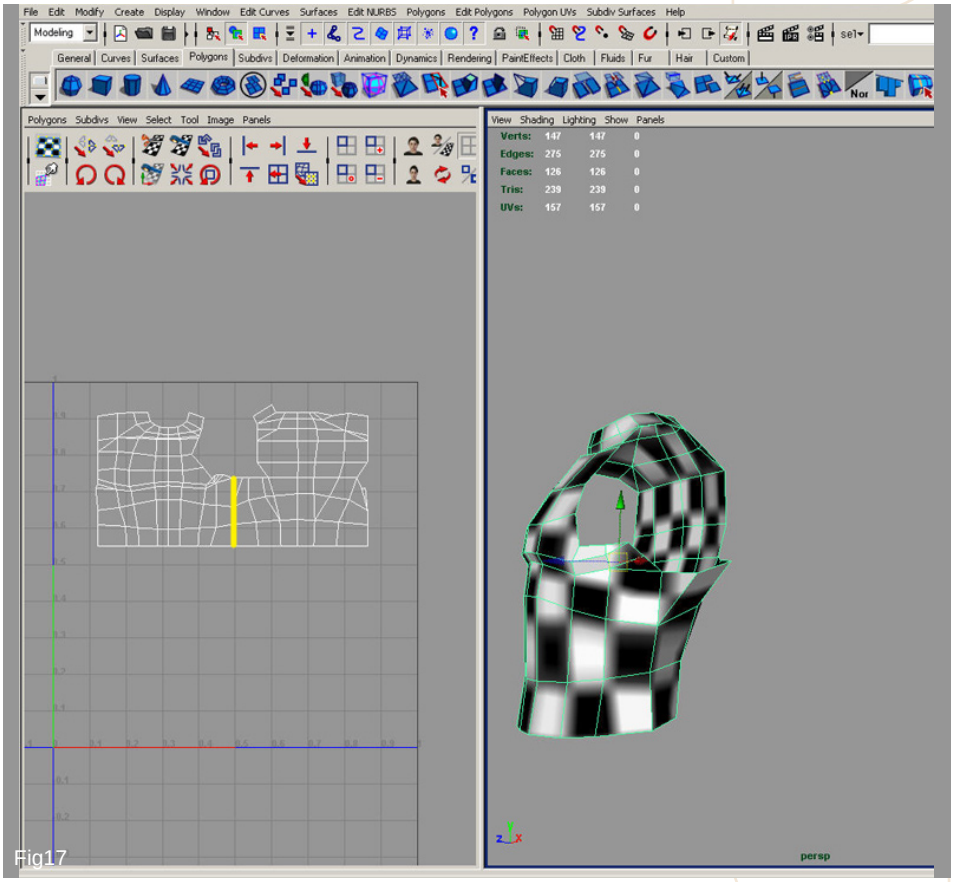


Fig17

18. Now we can move on to the leg. Using "Cylindrical Projection" I have projected the UV's. Then in the same way as I did for the torso I using Cut UV's tool I've split the shell in two parts front and back ash highlighted in the image. Then I sew them together. In order to maintain the regularity of the texture I had to align the UV's using the tools available in "UV Texture Editor" window as show in Fig18.

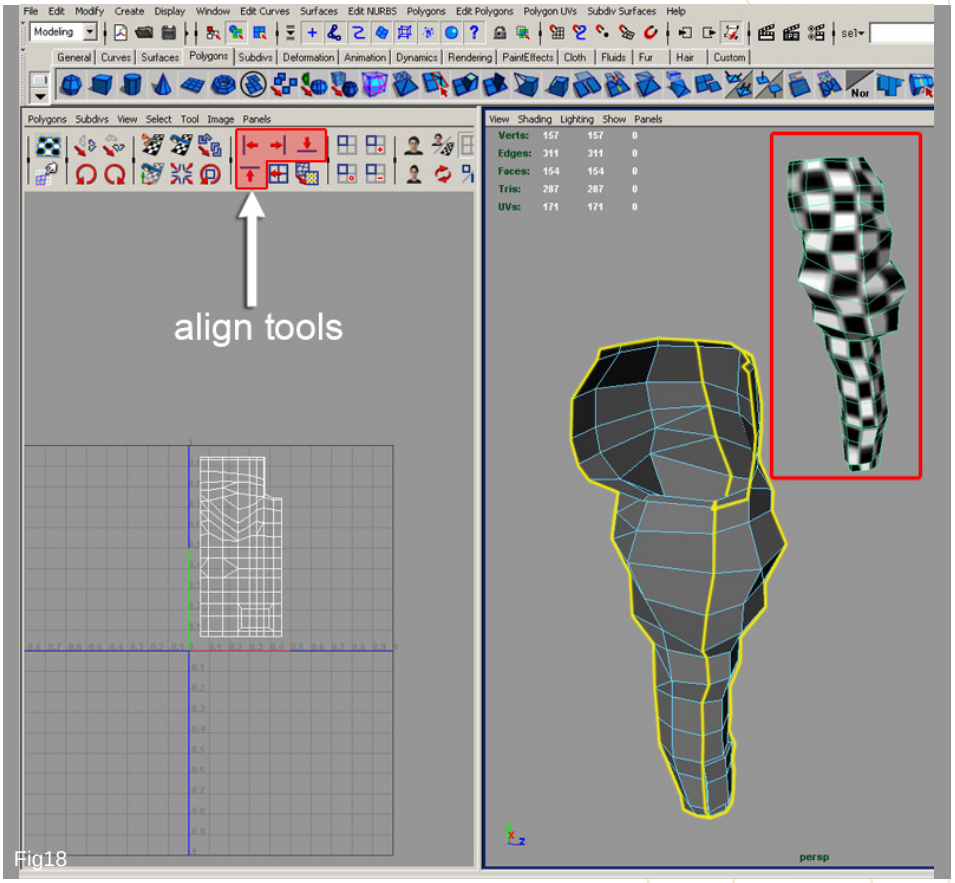
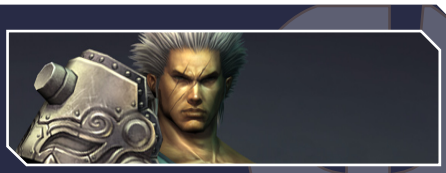


Fig18



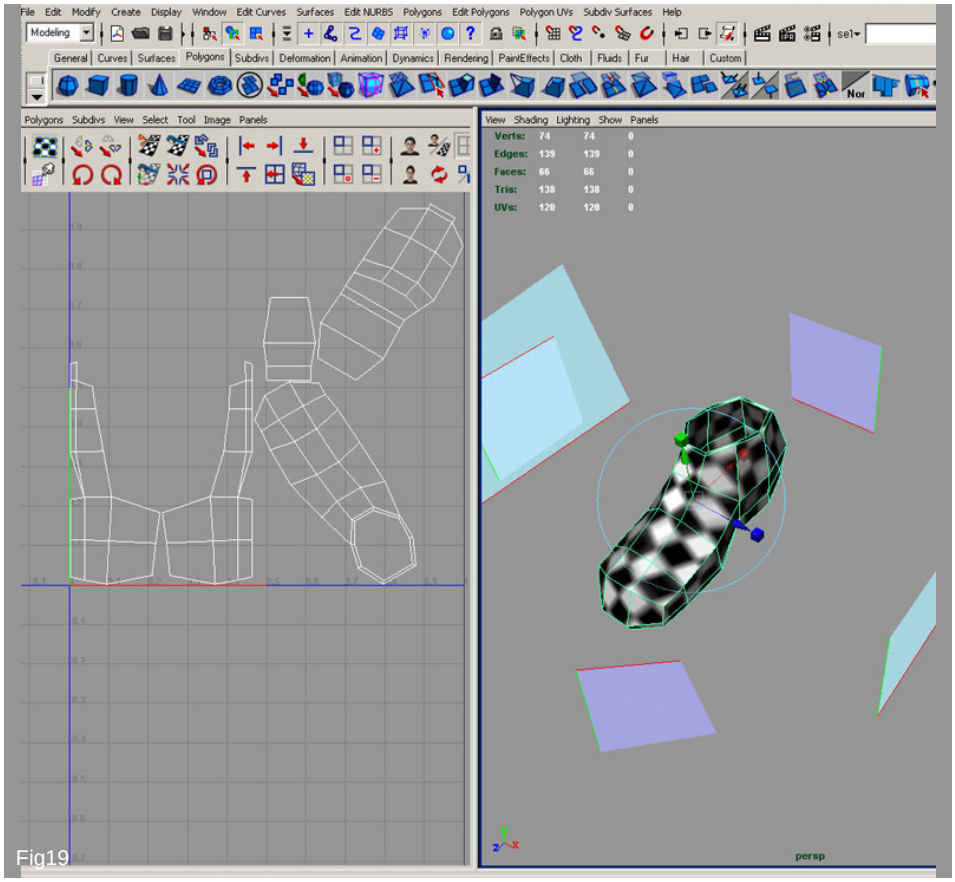


Fig19

19. Regarding the foot use “Automatic Mapping”. This is very often a very time expensive method but for our foot this is much simpler because we don’t have so many parts to sew. (Fig19).

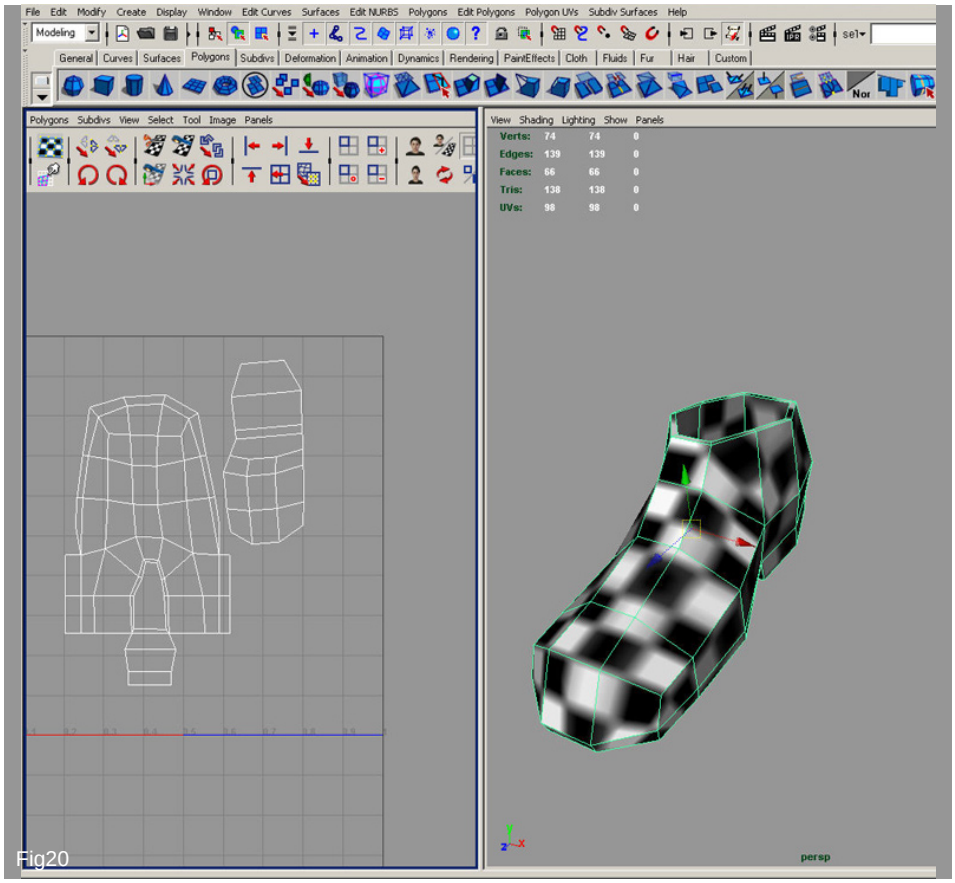


Fig20

20. Using move and sew tool weld together the UV’s as in Fig20.

21. We can go to the arms using the same procedure “Cylindrical Mapping” The only difference is now that we should rotate the manipulator in order to maintain the same angle as the arm. Using exactly the same techniques as we did for the legs split the one shell of the arm in two shells front and back and weld them back together as we did for the leg. Try to hide the welding line in the most less visible place like between the legs, under the arm. This way the stretched areas will not be visible.

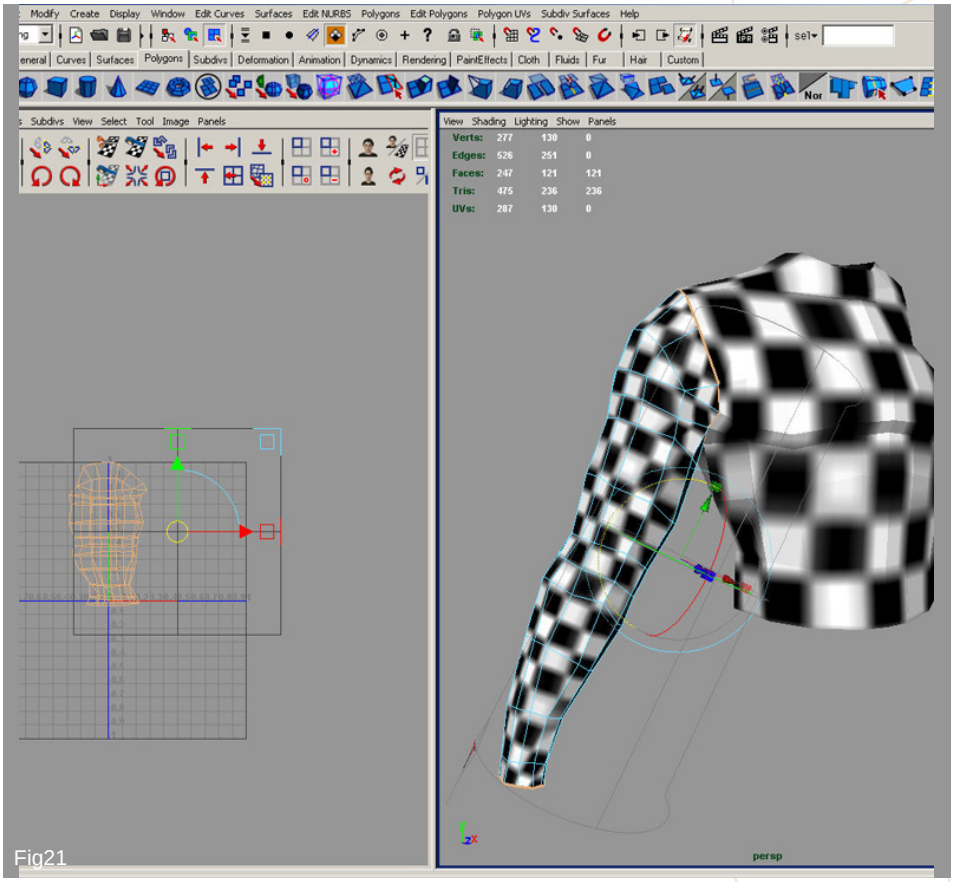


Fig21

22. In Fig22 is highlighted in yellow seam lines. They are made mostly in the less visible area so if may appear problems with the edges that are not matching perfectly on the final texture it will be in the places where can’t be seen. Some yellow highlights will probably disappear when well combine back the whole body.

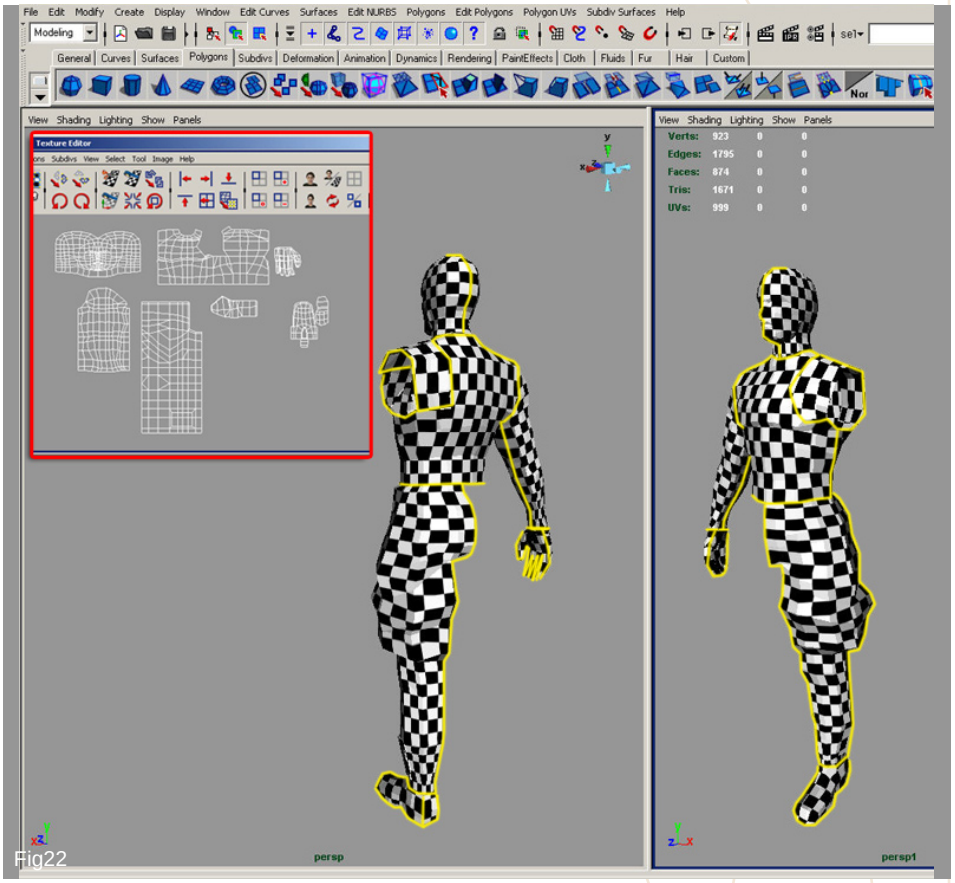
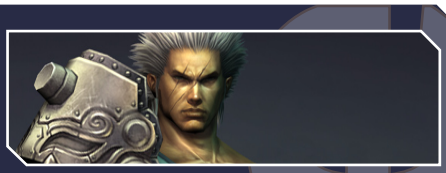


Fig22



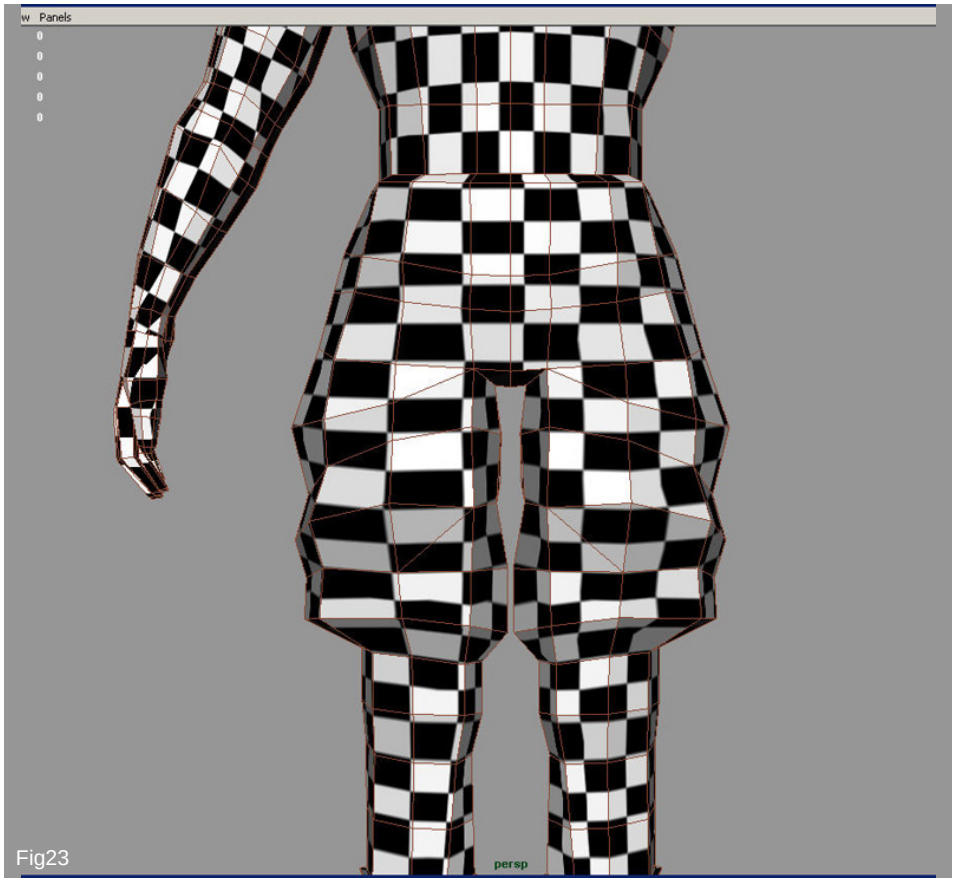


Fig23

23. I'll duplicate the leg and I will transfer also the UV's from one leg to another. In legs case I can do this because both of them are similar. On the other hand I cannot do the same for the arms because they are different so I will unwrap the other arm using the same techniques. (Fig23).

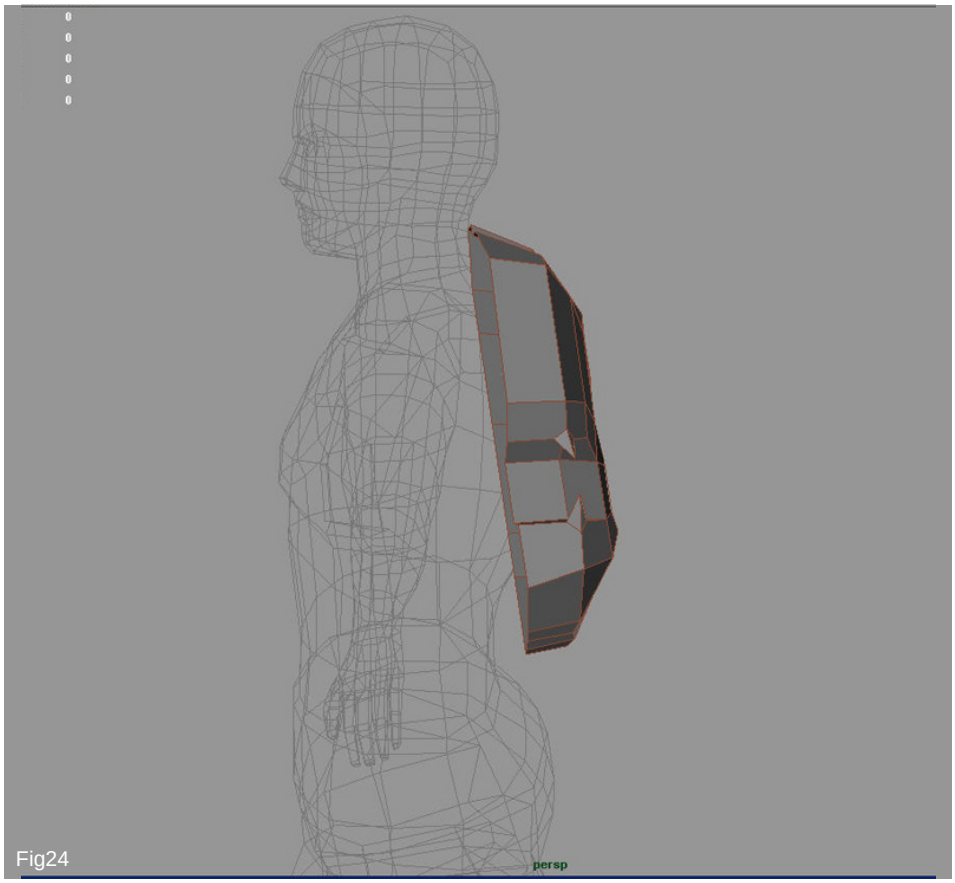


Fig24

24. Once we have finished with the legs we can move to the armour. In armour's case we can work only on to the half of the armour since it is symmetrical (Fig24). Cut a half of the armour taking care to be very precise when you are making this.

25. Now apply a “Planar Projection” and rotate the projection to maintain the squares as accurate as possible Fig25.

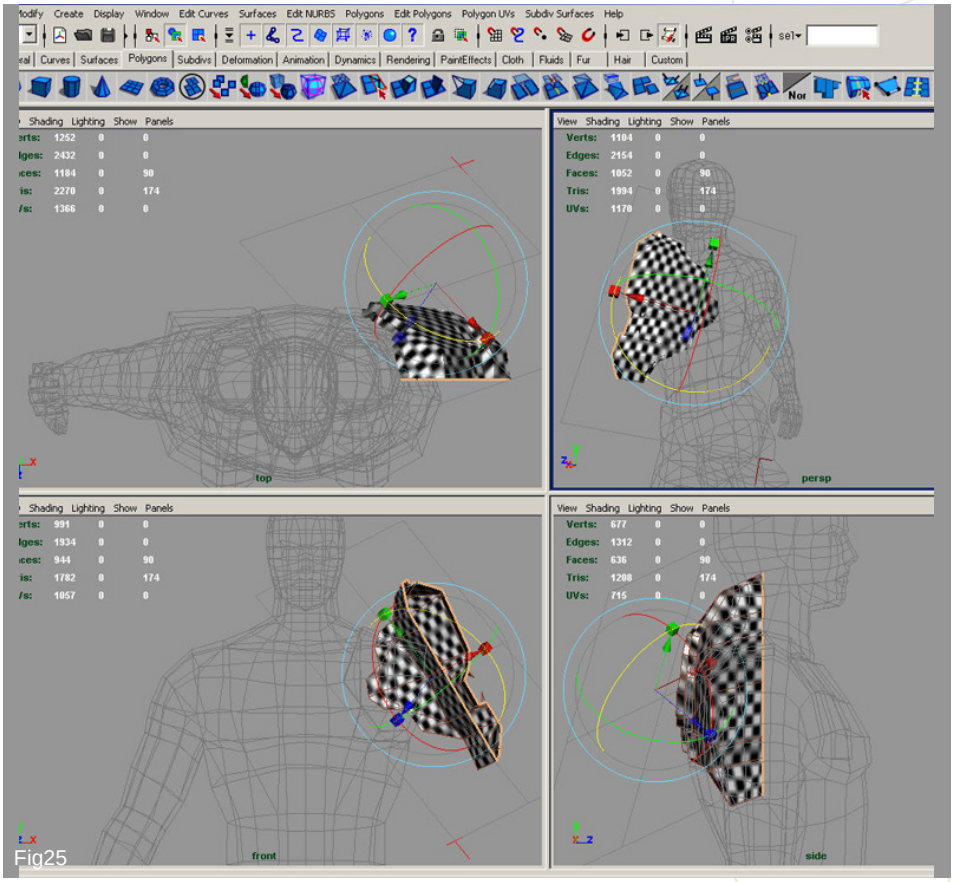


Fig25

26. Then duplicate the half part of the armour and move it onto the other side in order to form back the original armour as shown in Fig26. You can use exactly the same methods to map all the armour pieces. In the case of the accessories you can planar map all of these and will not need to do anything different to what we have done already.

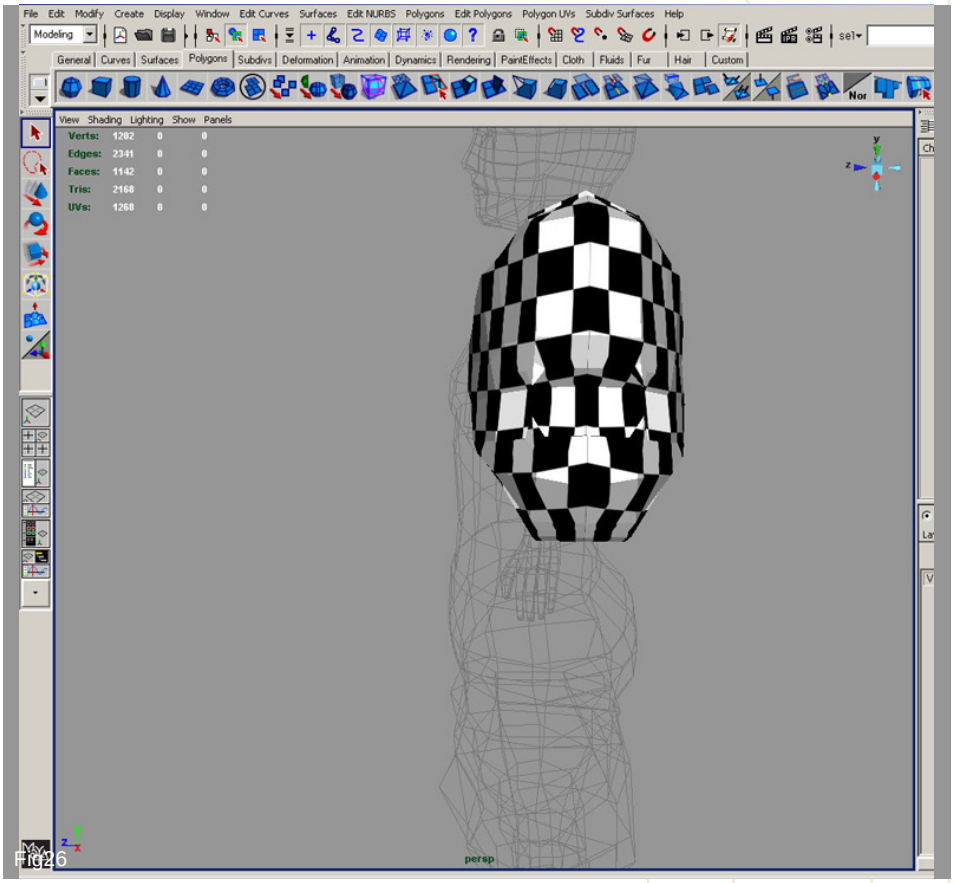
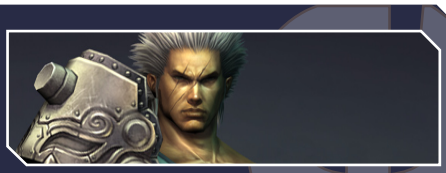


Fig26



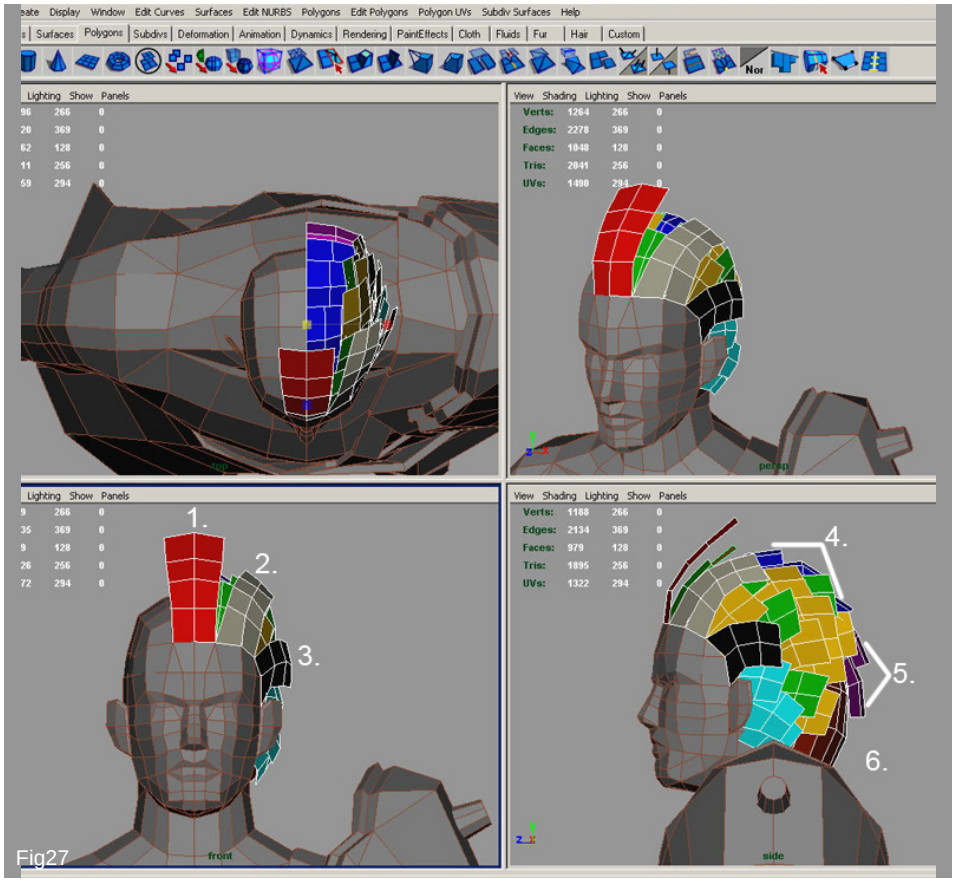


Fig27

27. It is time to move onto the hair once we have finished with the armour. Due to the large number of pieces that are forming the hair if we will map each element this will take us far too much texture space. We will map only nine pieces. These groups can be seen in Fig27 organized by the colours. On top of the head are three blue pieces of geometry so you could only map one and then copy this twice. When you have finished this completed the rest of the hair pieces.

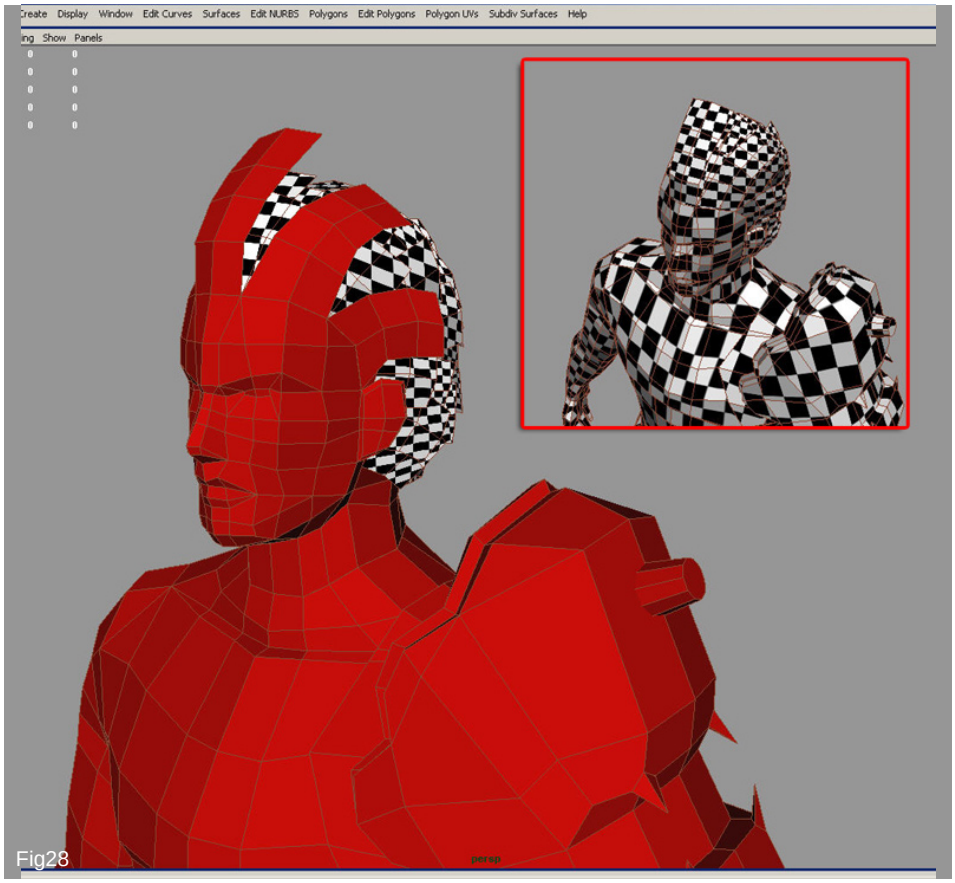


Fig28

28. After the hair finished attach the front three pieces of geometry to the head as highlighted in red in Fig 28. The rest of the hair must remain independent.

29. Now move those three front pieces of the hair in line with the top of the head. To save more space in texture area select the row of verts highlighted in red in Fig 29 and Cut them. move the right part of UV shell over the left side overlapping both of them as highlighted in yellow. This way we are saving a lot of texture space.

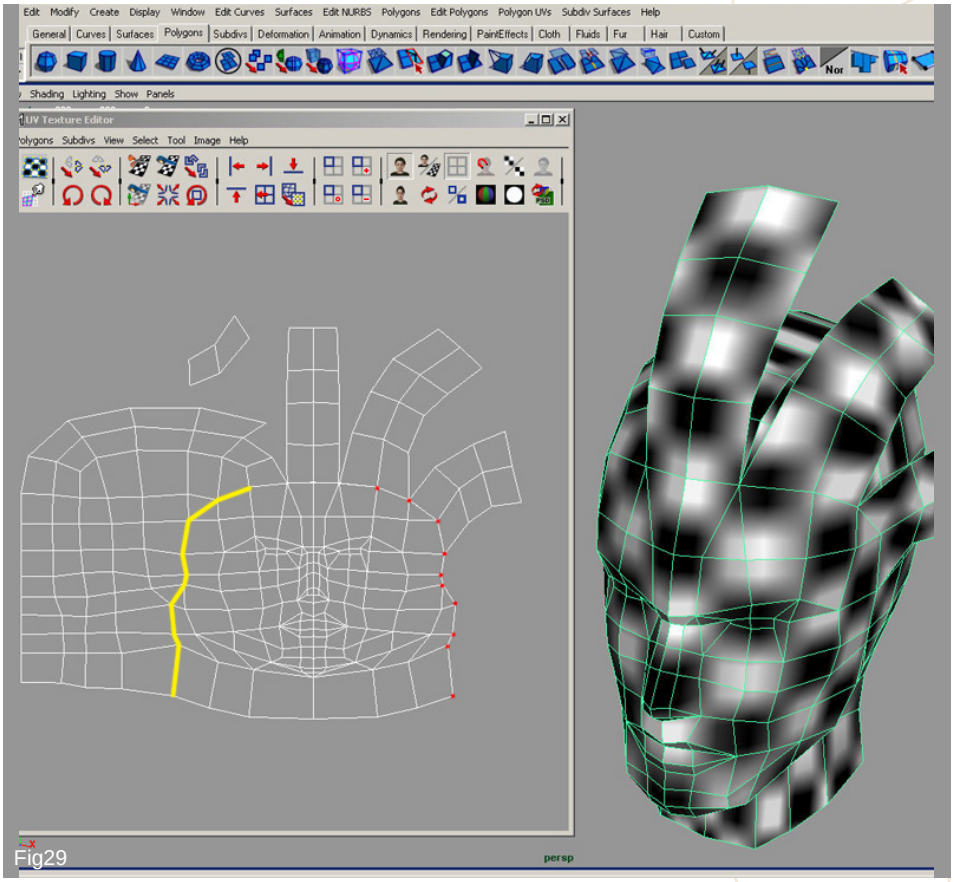


Fig29

30. This is the end of UV mapping. Now we're going to assign materials for each part for which we have created UV maps. Open the "Multilister" window. And start creating new Shading Groups. It is very important to rename each SG and material. Fig30.

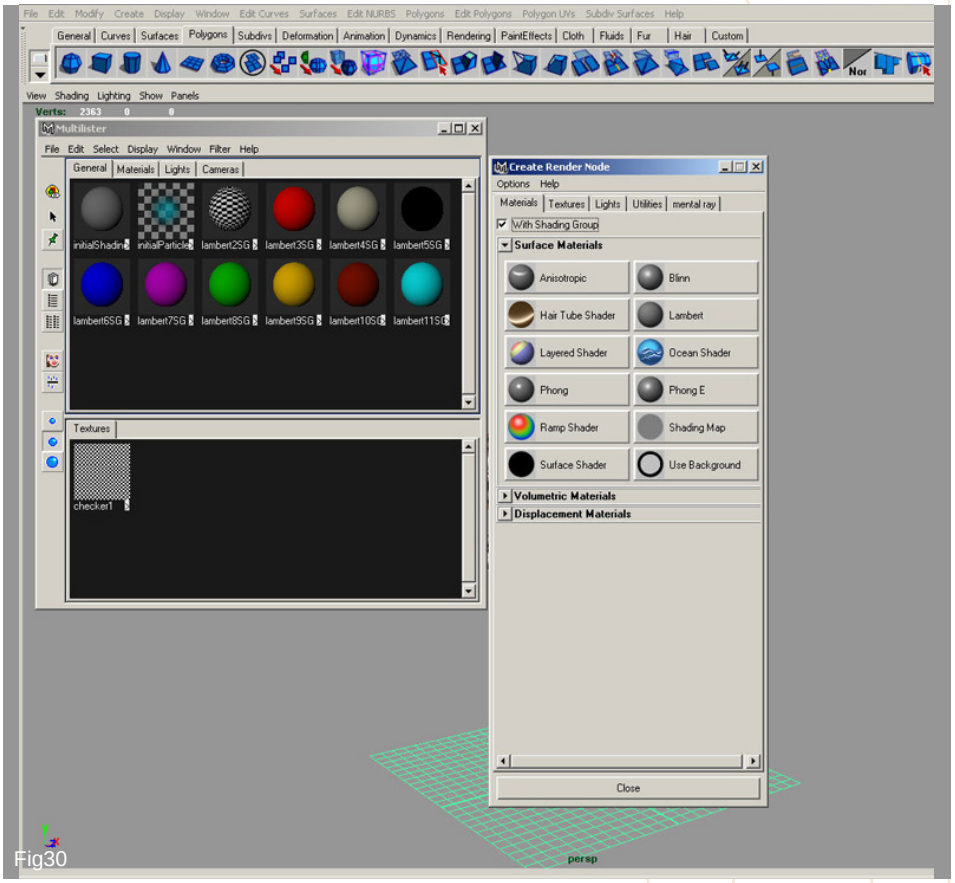
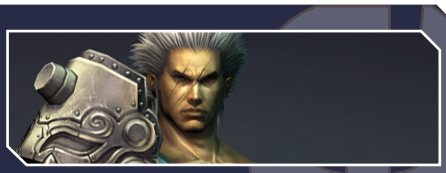


Fig30



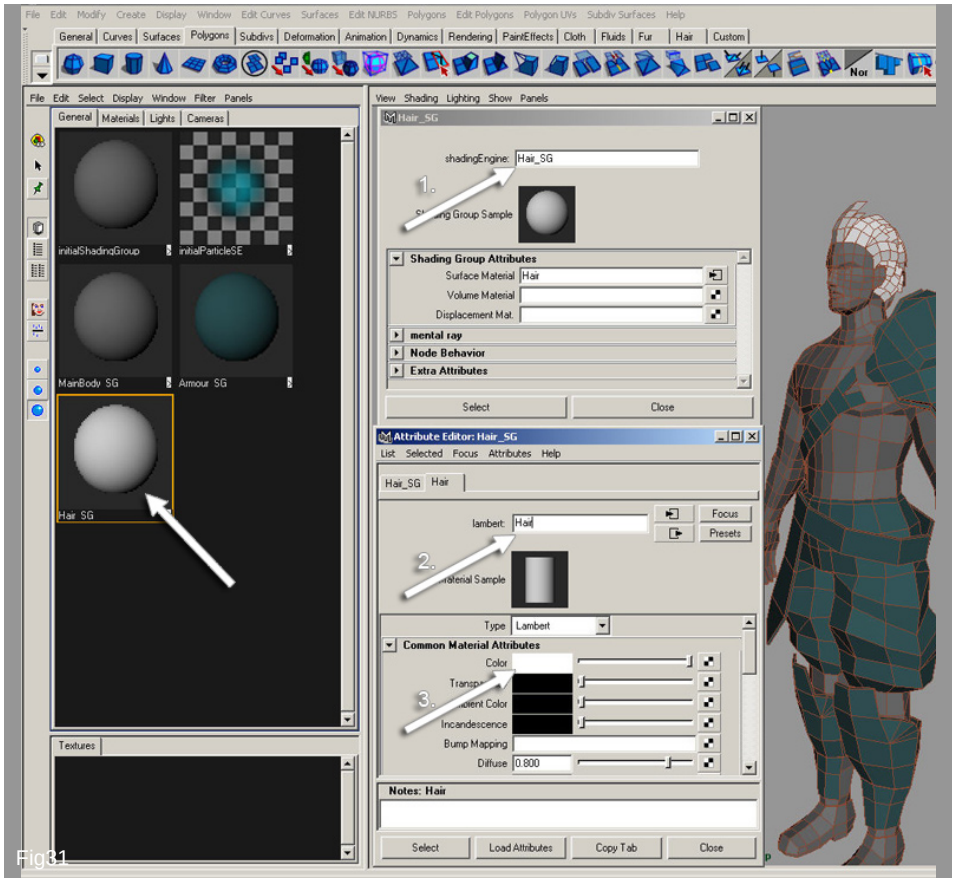


Fig31

31. It is very important to name materials in a correct way because this way each person who will ever look over the scene will easy understand what's happened, and also it is clear to which part of the object will assign a particular texture. In Fig 31 is shown 3 steps to rename the "Shading Groups", by using "name_SG" step 1 In our case is "Hair_SG". Name the material "name" without using any suffix in our case just simple "Hair", step 2. And choosing colour by clicking directly on the colour. That's it.

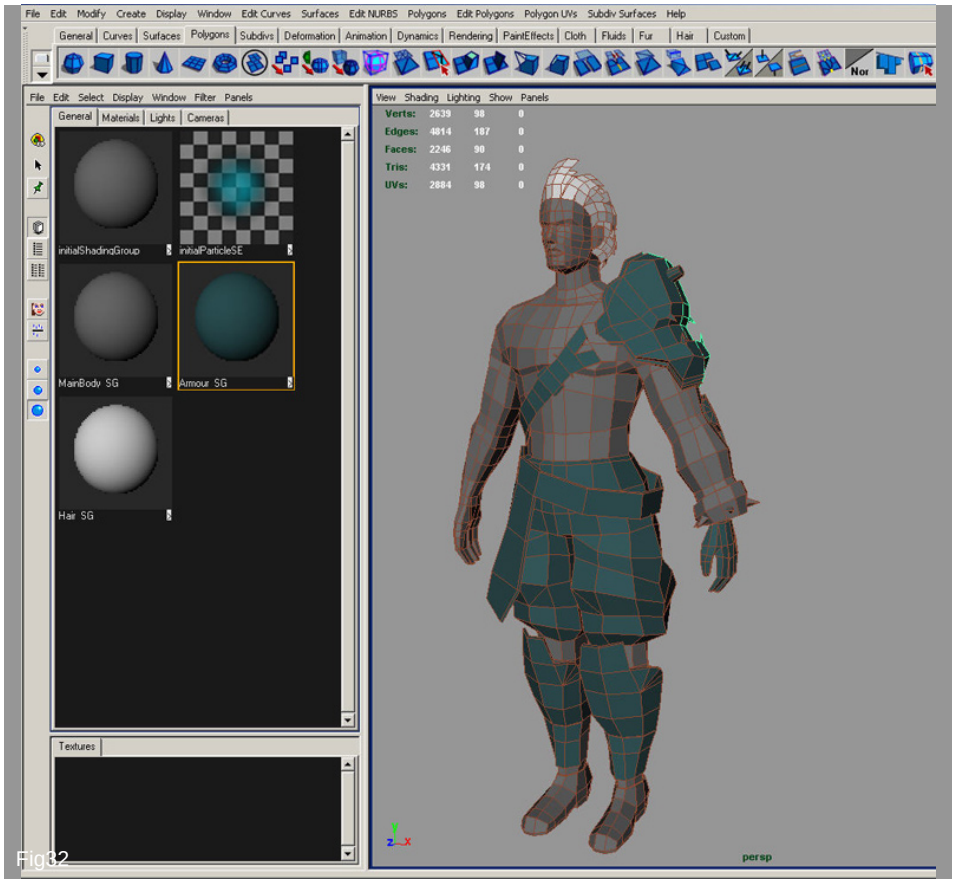


Fig32

32. Now assign each SG to each part of your model accordingly to the names "MainBody", "Armour" and "Hair" as shown in Fig32.

33. Now because we have unwrapped everything separately we are going to arrange all these UV's pieces into a template and export it as a final texture layout. In order to see all the unwrapped geometry together we will have to attach all the pieces of geometry into a single one temporarily. In Fig33 you can see that the model on the right is a single piece of geometry while the left one is not including the armour. We can see now all the UV's in "UV Texture Editor".

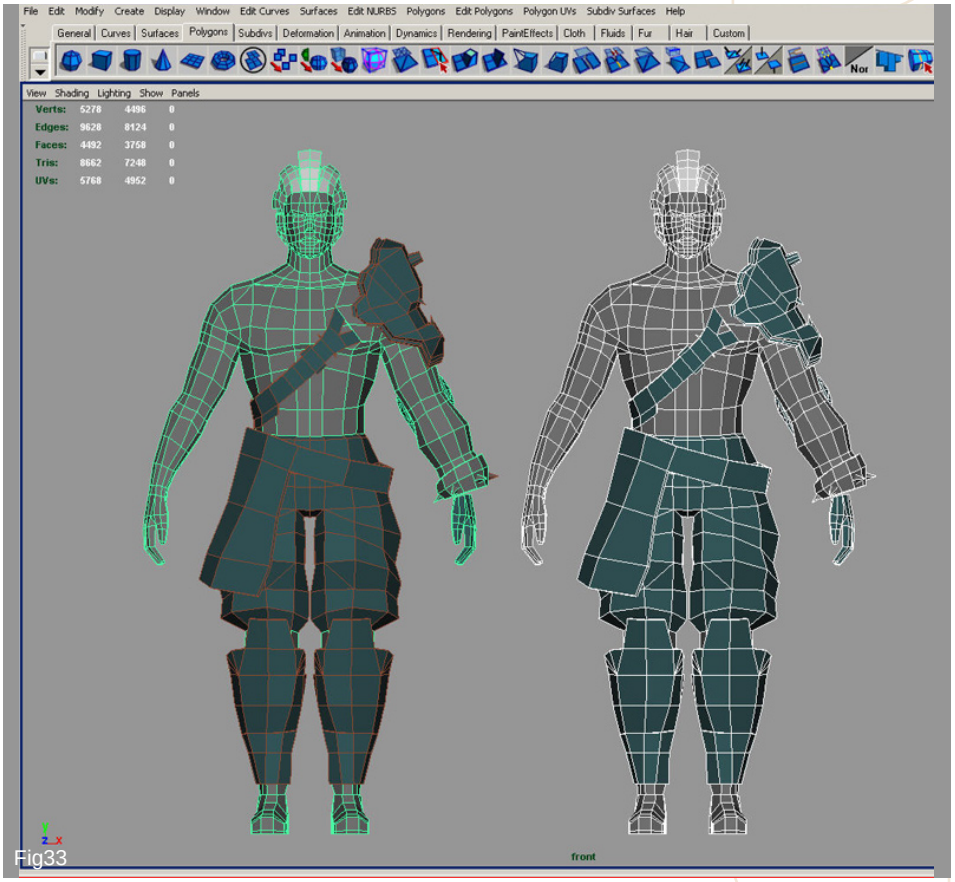


Fig33

34. Here comes the puzzle part when we must fit every piece of UV in one single square. There are limitless way of arranging UV's in layout. You must consider here the importance of the UV shell, how much is seen, and so on. For example you'll assign enough space for the chest because it is almost always seen, but for the foot, or hand, or knee is no need for having to much space. So, taking care of all these aspects you should get more or less an UV layout like the one in Fig34. Remember you may assign as much space as you consider for each part so, making an UV layout is really like puzzle, always moving UV's positions, rotation, Flip UV's, etc.

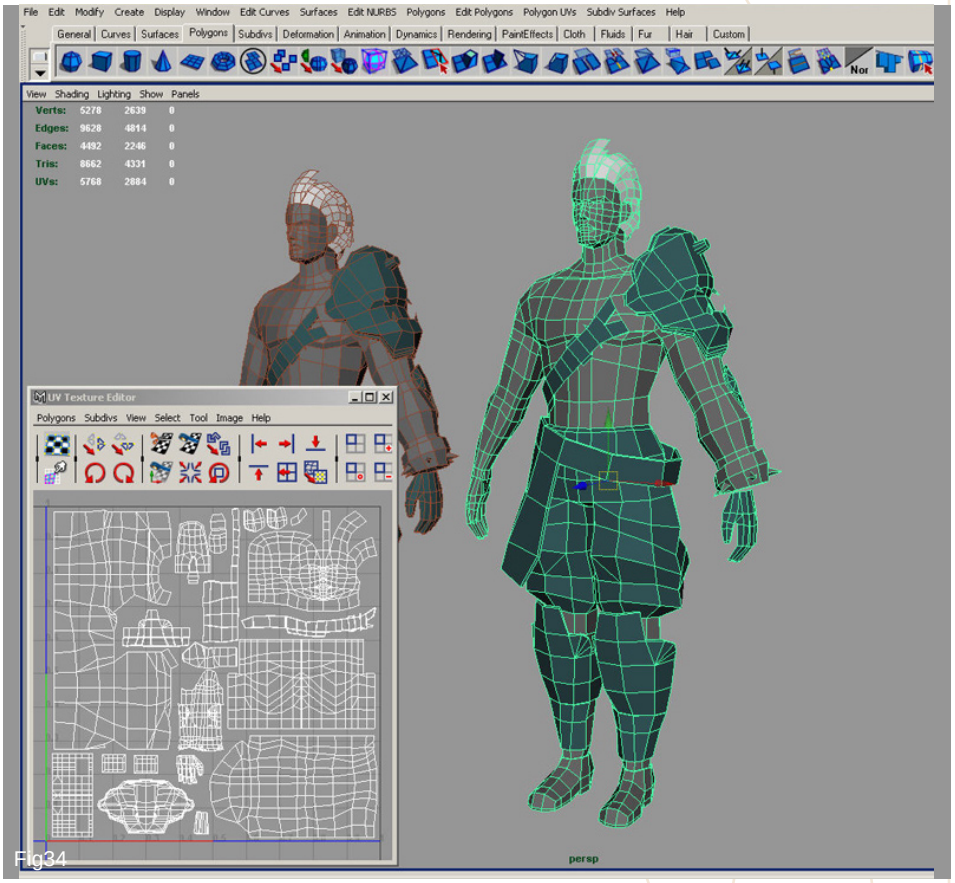
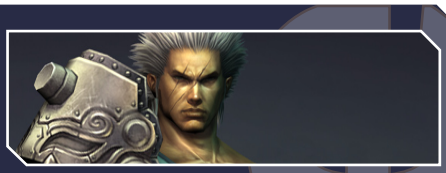


Fig34



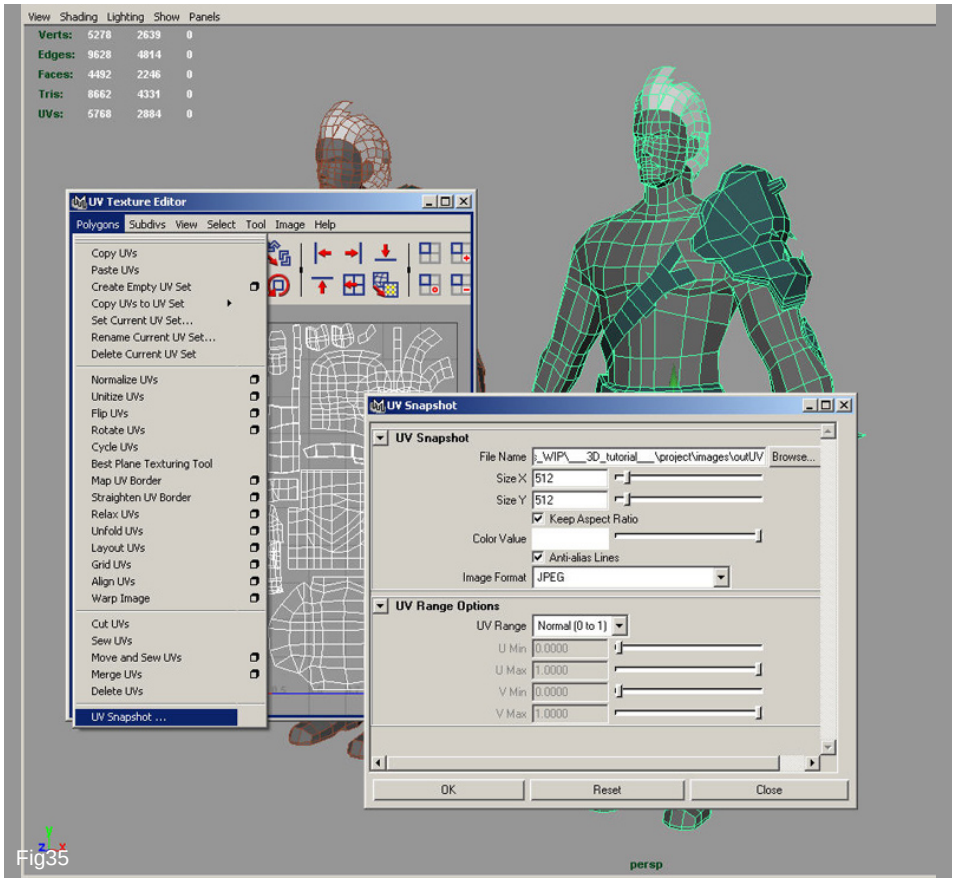


Fig35

35. We have one more thing to do before starting texturing: exporting UV layout. This is very important because the artist will paint respecting this layout. If there is no UV's so in one place of you layout, there will be no colour. So in Fig35 you have "UV snapshot" option which allows you to export an UV layout. You may export in different sizes, colours, formats, and so on. Choose you texture file size and export it and that's all for now

This concludes this tutorial! It was a long one and I know I could not explain everything but I am hoping that you've made it to the end. See you next time with the texturing tutorial.

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The Swordmaster

SOFTIMAGE|XSI

Is our new precise, step by step tutorial for highly polished, low polygon game character with detailed texturing for real-time rendering. We have had the tutorial created for the 5 major 3d applications, but even if you are not a user of one of them, the principles should be easily followed in nearly all other 3d applications. Over the next 8 months we will outline in detail the process for creating the 'Swordmaster' you see on the left. The schedule for the different parts of the tutorial is as follows:

Issue 009 May 06

Modeling the Head

Issue 010 June 06

Modeling the Torso

Issue 011 July 06

Modeling the Arms & Legs

Issue 012 August 06

Modeling the Clothing & Hair

Issue 013 September 06

Modeling the Armour

Issue 014 October 06

Mapping & Unwrapping

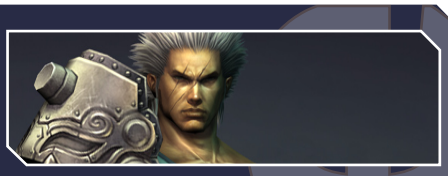
Issue 015 November 06

Texturing the Skin & Body

Issue 016 December 06

Texturing the Armour & Clothing

Enjoy ...



PART 6

PART TITLE MAPPING AND UNWRAPPING.

INTRODUCTION:

Welcome to the sixth part of the tutorial. This month we will take a look at the unwrapping process. It may seem a boring and long step, but it is a very important phase. Since it is a long process and it is all put together in one single part, only the most important aspects will be taken into consideration, showing the principal techniques. The beginners will be provided with enough information to follow the tutorial, understand the main techniques, and reuse them on their own, completing the model without pain.

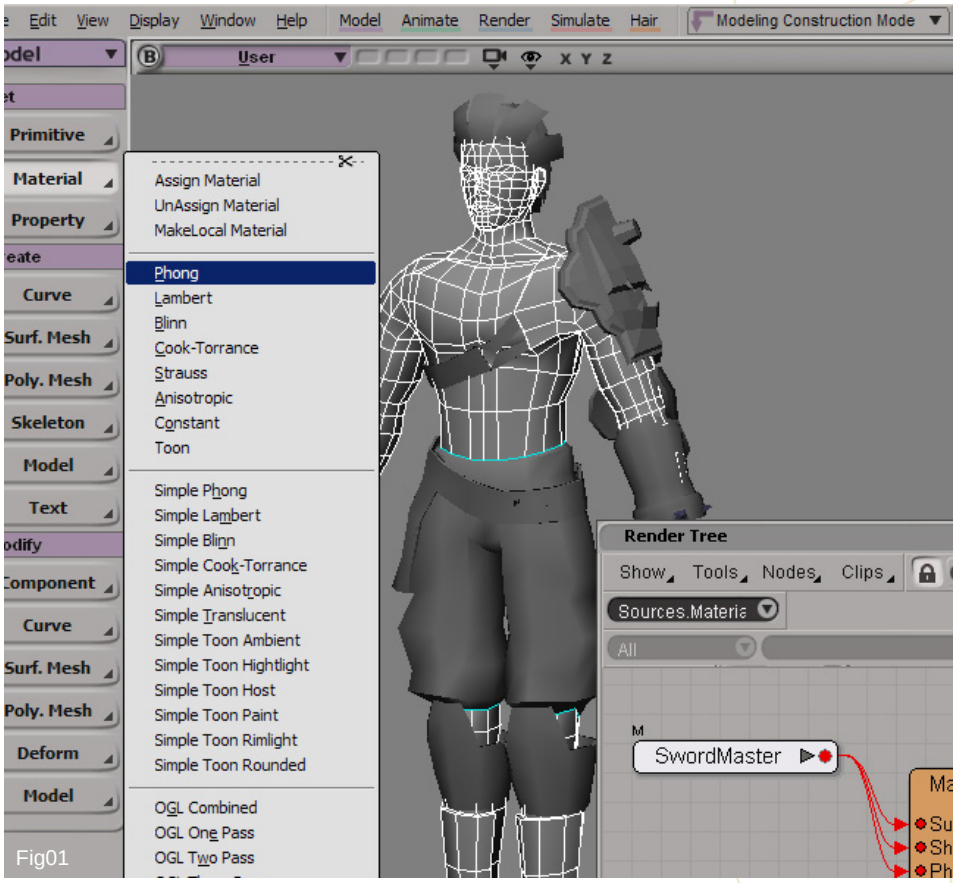


Fig01

1. Let's start selecting the body mesh and assigning a new Phong material to it. When the shader property page shows up, give this material a name (for example, SwordMaster). Then select all the other meshes and assign them the same material picking it from the body. Now we have the same SwordMaster phong material on every part of the character.

2. Now we need to assign a texture image to check the integrity of the mapping coordinates while working through the unwrapping process. Open the RenderTree (the shortcut is the "7" key) and create a new Image node using the Nodes -> Texture -> Image command. This will create 2 new nodes in the RenderTree: Image and noIcon_pic1, as showed in Fig02. These nodes are connected together; we need to connect the Image node to the Diffuse node of the SwordMaster phong shader. Just drag it with the mouse from the red dot in the Image node to the SwordMaster shader; this will create a connection between the two nodes, and you will be asked which node of the SwordMaster

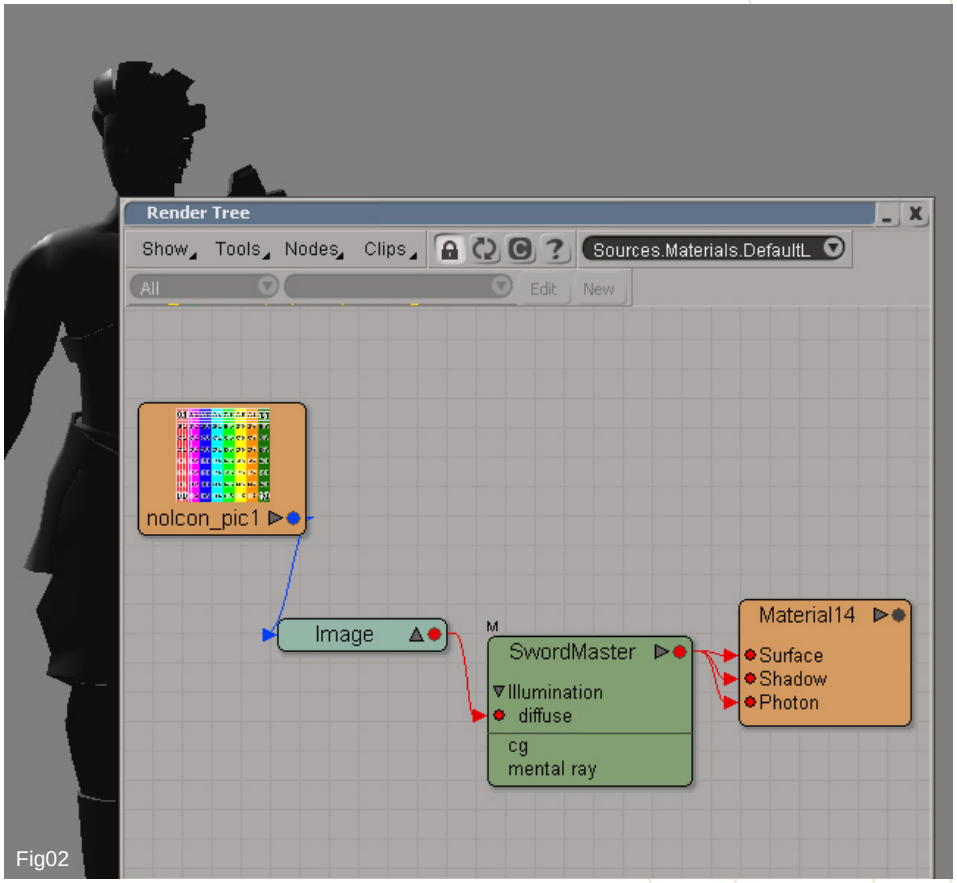


Fig02

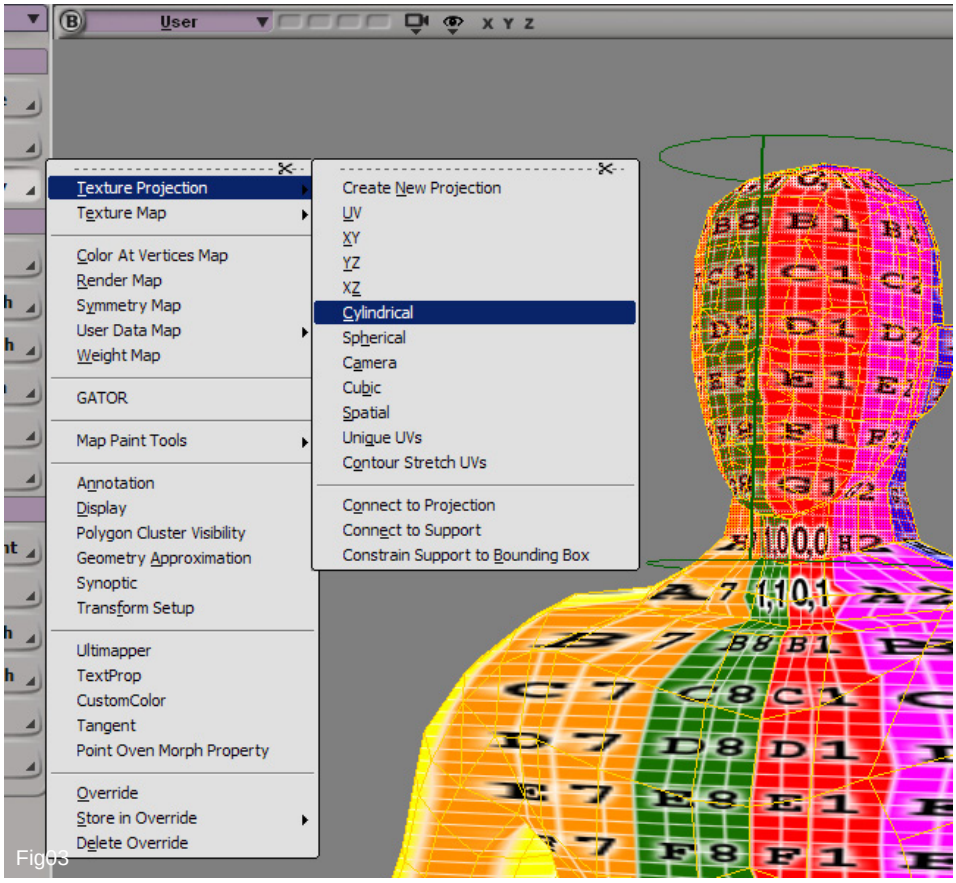


Fig03

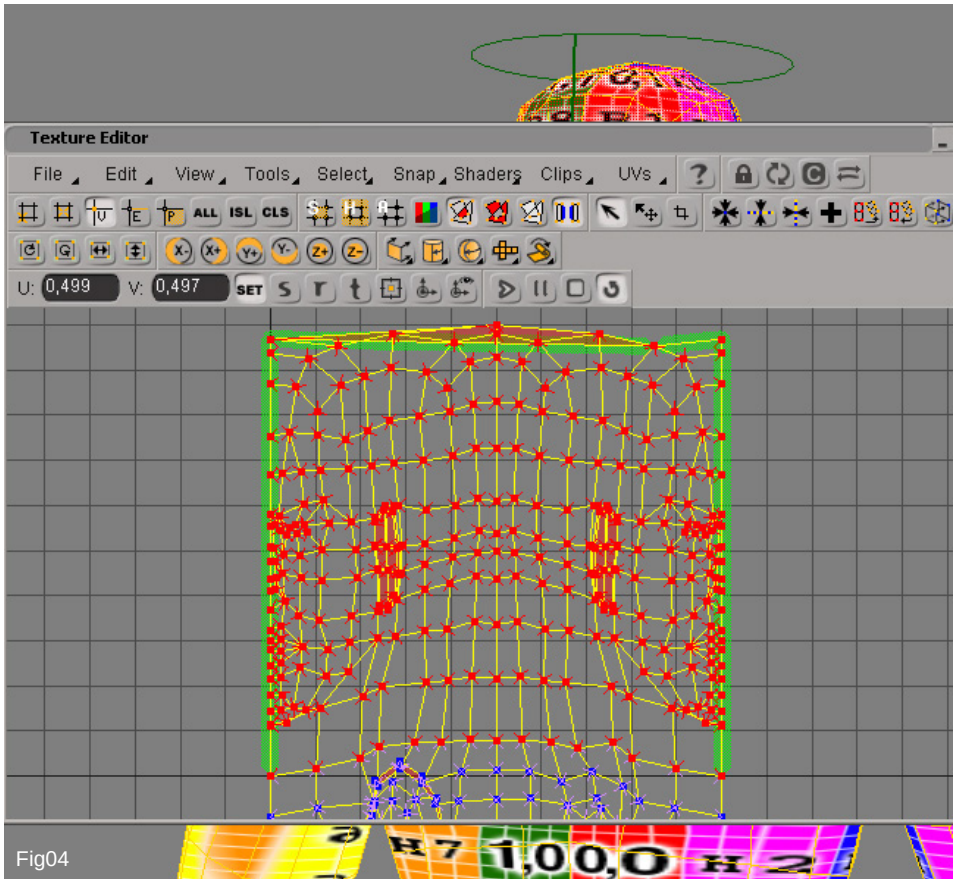


Fig04

shader you want to connect the Image to. Click on Diffuse, so the connection will be made. The noIcon_pic node contains a texture image called noIcon which will just suit to our needs: in fact, it is a square texture with many quads of different colours and numbers. This will help us understand better if there is any deformation or distortion in the mapping coordinates.

3. Before starting the actual mapping process, we need to set one more thing: go into the display mode menu and choose Textured Decal. This will help to see the plain texture on the model without shading. As you probably would note, the model is not showing up any texture at the moment: we still do not see the noIcon texture image on the model. This is because the model does not have texture coordinates yet, and the program does not know how to put the texture on the mesh. The first thing to do then is to assign a generic standard mapping method and work on it to achieve the best result for the model. Let's start from the head. Go in Poly selection mode (shortcut is "Y" key for the rectangular selection, or "U" key for the raycast selection mode) and select all the polygons of the head. From the Property menu on the left of the screen choose Texture Projection -> Cylindrical. You will see the texture image applied to the model. A green wireframed cylinder will appear around the head polygons you just selected before. This is called "texture support", and it is a sort of gizmo that you can move/rotate/scale to change the way the texture is wrapped around the mesh. The rest of the body is showing up the texture as well; this happens because the program tries to apply texture coordinates also on the unselected polygons, but as you can see there are distortions over there.

4. Now we are ready to deal with the mapping coordinates. All the work is done inside the Texture Editor, which can be opened using the Alt + 7 shortcut key. Here is where the mapping

process takes place. Initially you will just see something that recalls the polygon of the mesh and its vertices, but you must understand that these are mapping coordinates and not polygons, vertices and edges. For example, if you move or modify a polygon or a point, you are not modifying the topology of the mesh, but rather its mapping coordinates or in other words the way the texture is being wrapped on the mesh itself.

5. First of all, we need to make the texture appear in the Texture Editor, so we can see it and decide how to work on the mapping coordinates. Open the Clips menu in the Texture Editor and choose which texture you want to show inside the working area; in this case, the texture is noIcon_pic1. The texture will be displayed inside the editor. If the texture looks too bright, you can dim it with the Dim command (marked in green in Fig5); this will help to see better the coordinates you are working on. If you look better the Texture Support around the head, you will notice that there is a vertical line; this line represents the seam of the cylindrical mapping. In fact, confronting this situation with the one in the Texture Editor, you can see that the seam is exactly in the middle of the face. In order to fix this problem, we need to rotate the Texture Support on its Y axis by 180 degrees; this will position the seam in the back of the head, where it will create less problems. Take a look at Fig5 to see what happens into the Texture Editor before and after the rotation of the Texture Support.

6. Using one of the transform tool (Move, Rotate, Scale) on the elements in the Texture Editor will alter the mapping coordinates on the model. As you can see in Fig6, moving one of the vertices outwards in the Texture Editor creates a distortion on the texture on the mesh.

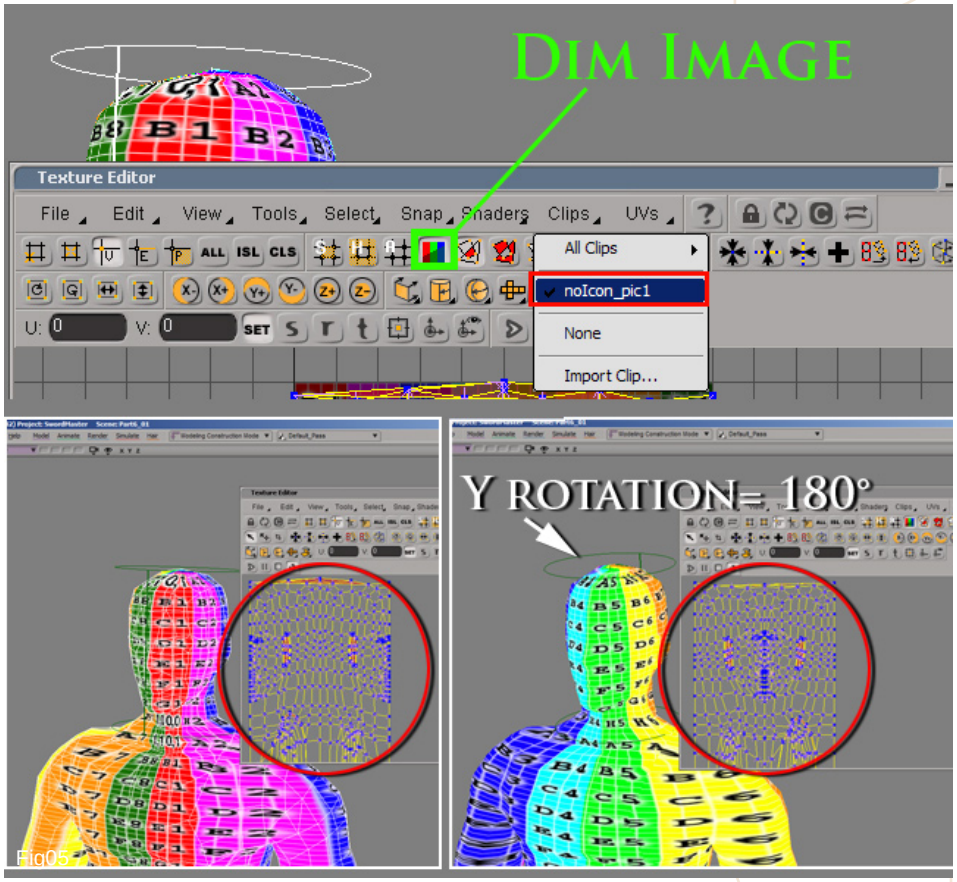


Fig05

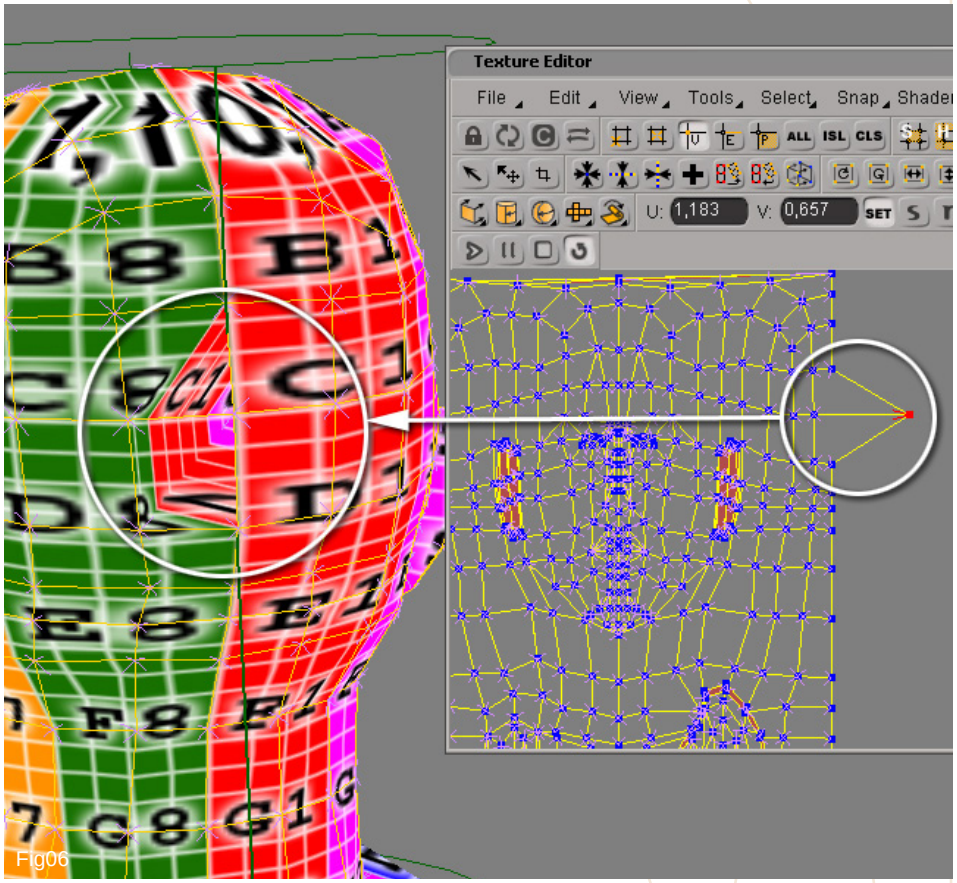


Fig06

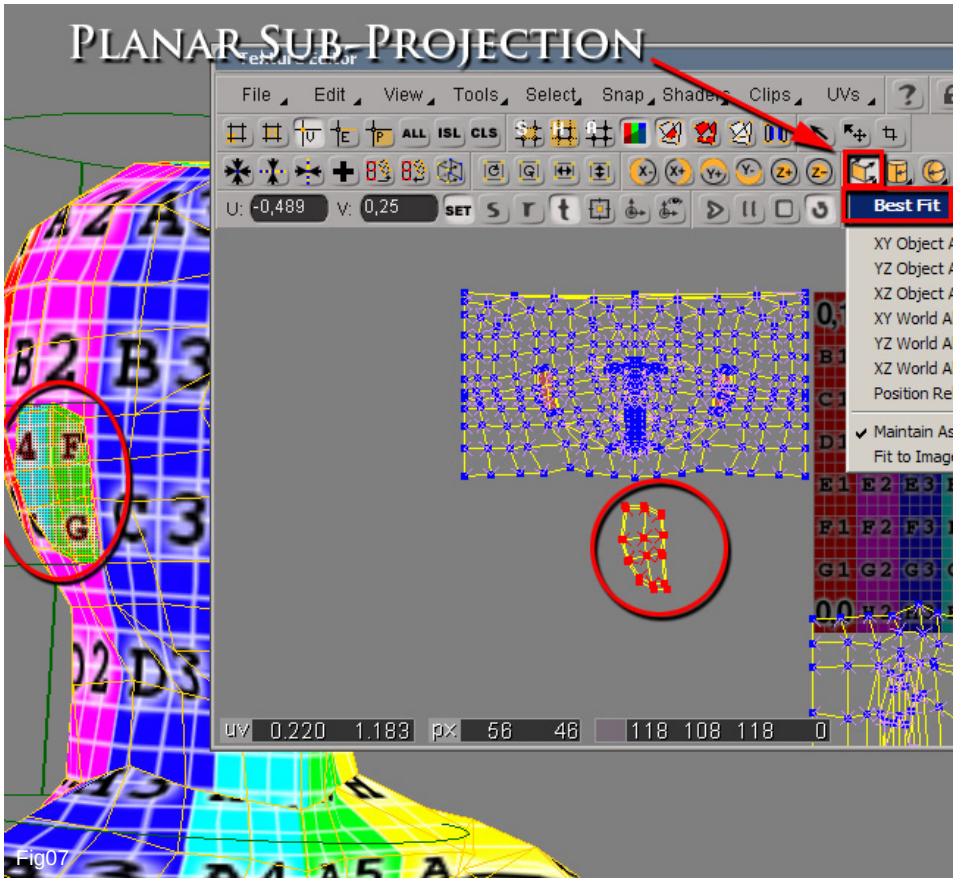


Fig07

7. Select the outer polygons of one of the ears and apply a Planar sub-projection (with BestFit mode) in the Texture Editor. The coordinates of the ear will be detached from the rest of the mapping and will appear in the quad of the texture inside the Editor. Just move them aside, as it was done for the head coordinates (see Fig07 for details). Every time you apply a new Sub-Projection of any type, a new Texture Support will be created, resembling the type of mapping you are using (a cylinder for Cylindrical, a plane for Planar, etc.).

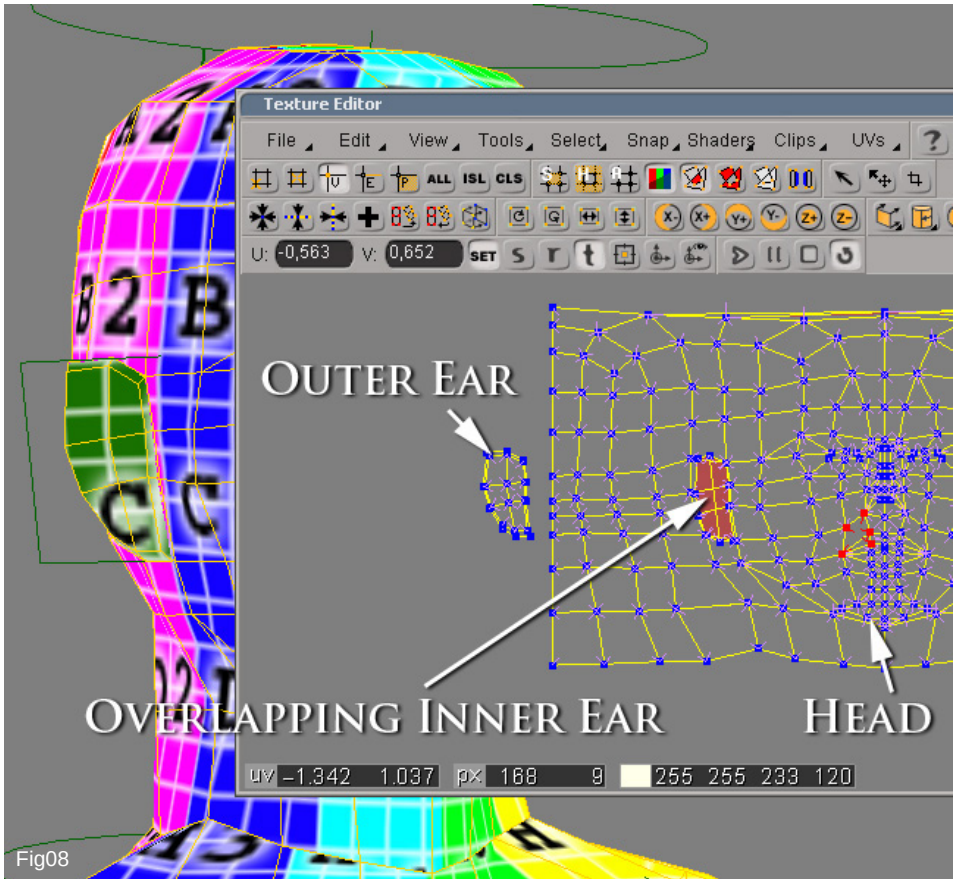
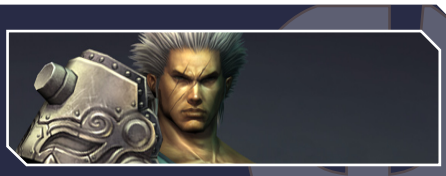


Fig08

8. In this phase of the work it is better to separate the pieces of mapping trying to use the best sub-projection type, keeping an eye on the size of the texture on the mesh. For example, let's take the head and the ear we have just mapped: confront them, and try to scale the ear so to fit the general size of the texture on the head. As you can notice, we did not select the inner polygons of the ear, and they are still connected to the head coordinates. You can see that there is an overlapping of coordinates: the inner polygons of the ear are above the head coordinates, and this is marked in red by the Texture Editor.



9. Select the inner polygons of the ear, and apply a new Planar sub-projection (BestFit). Now move these new coordinates aside with the parts we have already mapped (head and outer ear), and scale them to fit the size of the outer ear, like shown in Fig09. When you need to select and move clusters of coordinates (like the ear parts or the head) you don't need to manually select the components every time; you can just activate the ISL icon which will allow you to select the entire part clicking on only one of its components (vertex, edges, polygons).

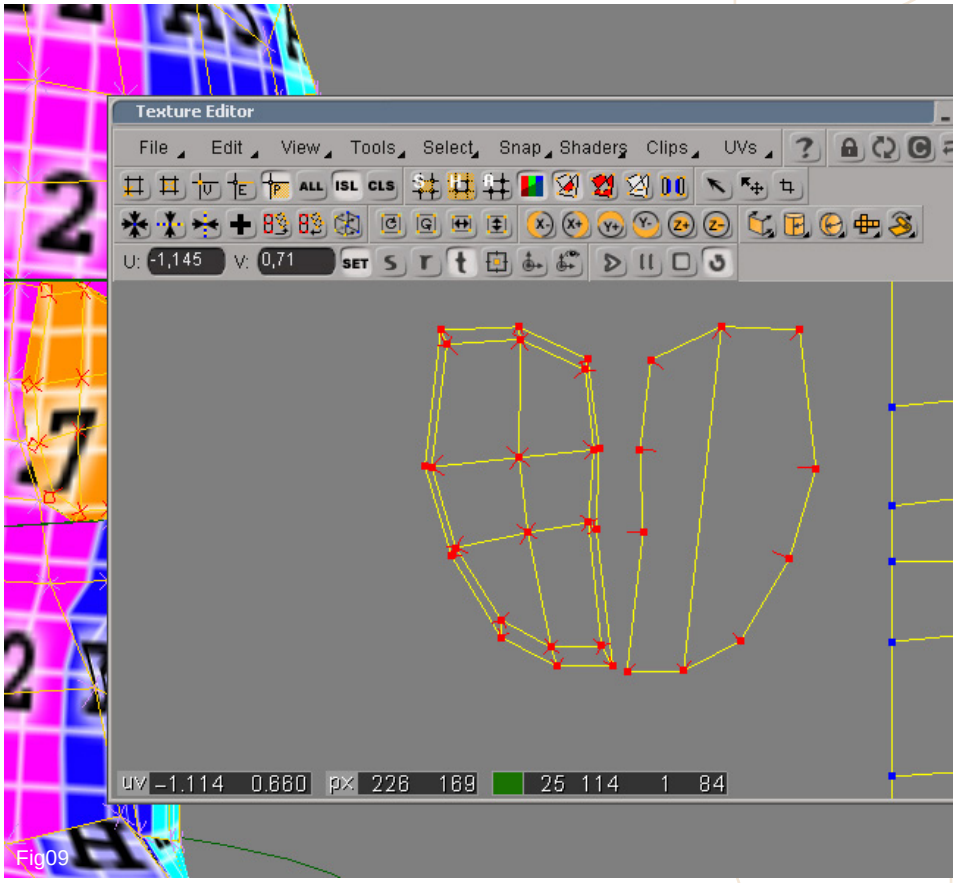


Fig09

10. Make sure that the two parts of the ear are very close to each other, select the vertex in the middle and use the Heal tool (the icon with the black cross on it) to merge the two parts together, like shown in Fig10.

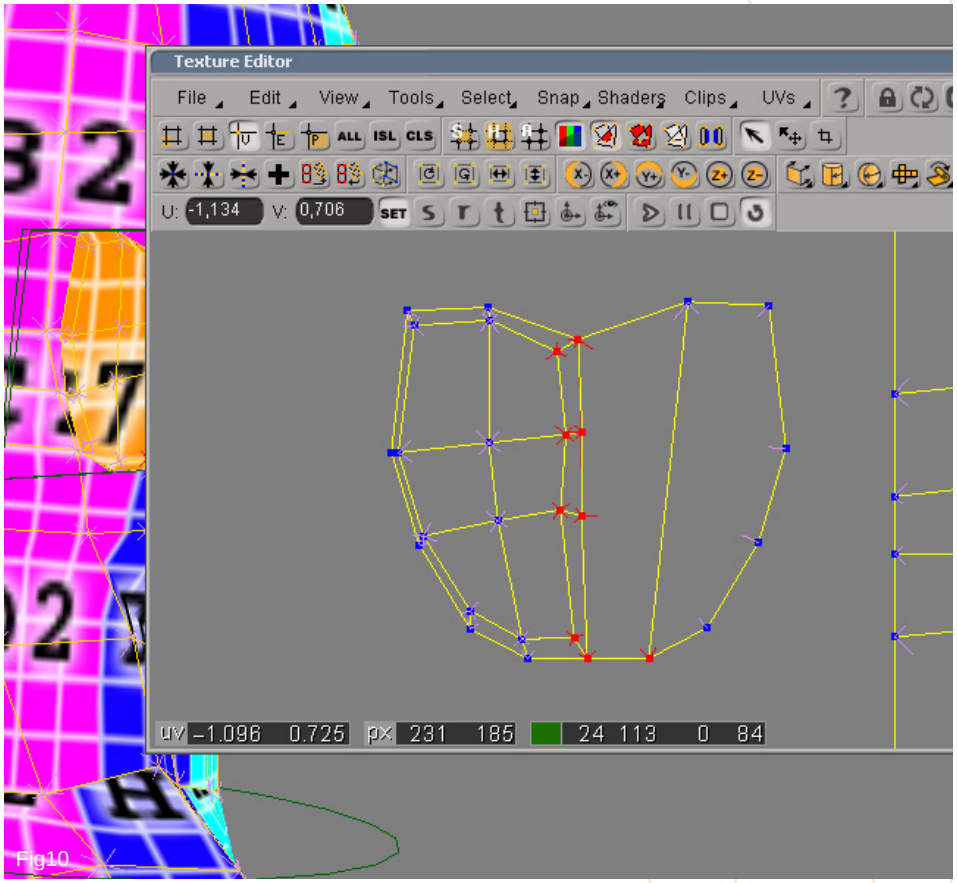


Fig10

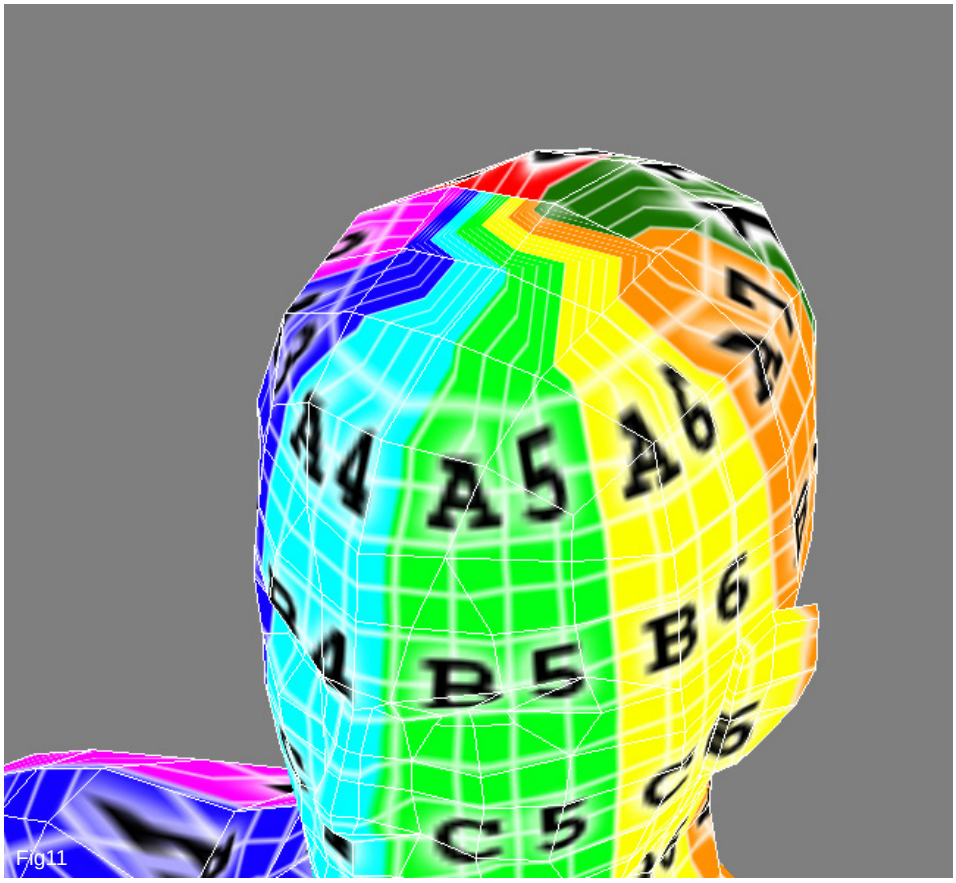


Fig11

11. Let's go back and fix the problem on the top of the head, which you can clearly see in Fig11. First of all, use the Freeze command to collapse every operation. The Texture Supports will disappear, but the modifies we have done so far will be kept. Now select the polygons of half of the scalp and apply a new planar sub-projection. Move the new coordinates aside the rest of the head coordinates. In this way, we have just isolated the polygons with the stretching problem, and we can work on only one half of the head to fix the problem.

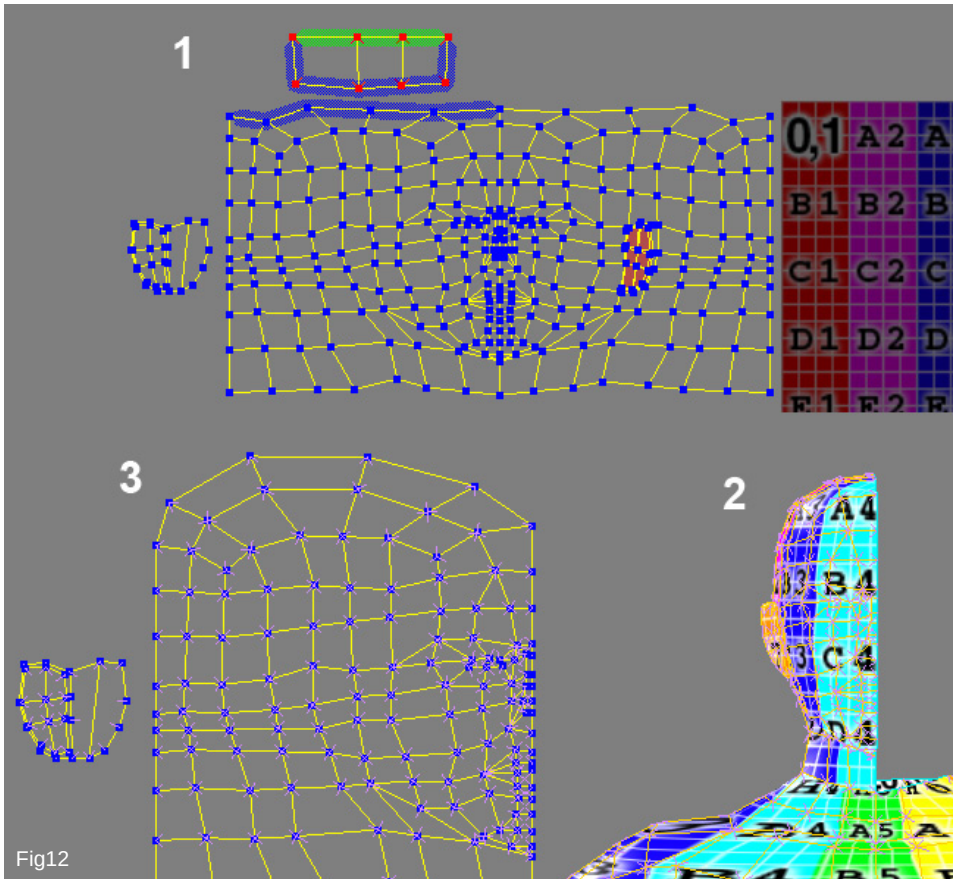
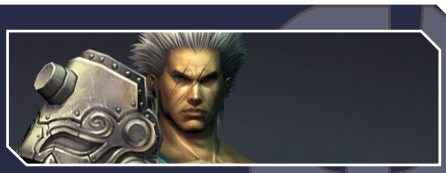


Fig12

12. As you can see in point 1 of Fig12, if you select the half of the scalp you just mapped with the planar sub-projection the Texture Editor will mark the connection between the different pieces of mapping coordinates (if it doesn't, just activate the Show Connectivity icon). We can now go back to the Viewport, select the half of the head with the part of the scalp we have not mapped yet and delete it, like shown in point 2 of Fig12. Finally, using some more planar sub-projections on the half of the scalp in the Texture Editor and using the Heal Tool we can fix the problem and bring the mapping coordinates together, like shown in point 3 of Fig12.



13. Do not worry if the scalp is not perfect, since it will lastly be hidden by the hair, so just try to give a regular shape, keeping and eye to the texture distortion.

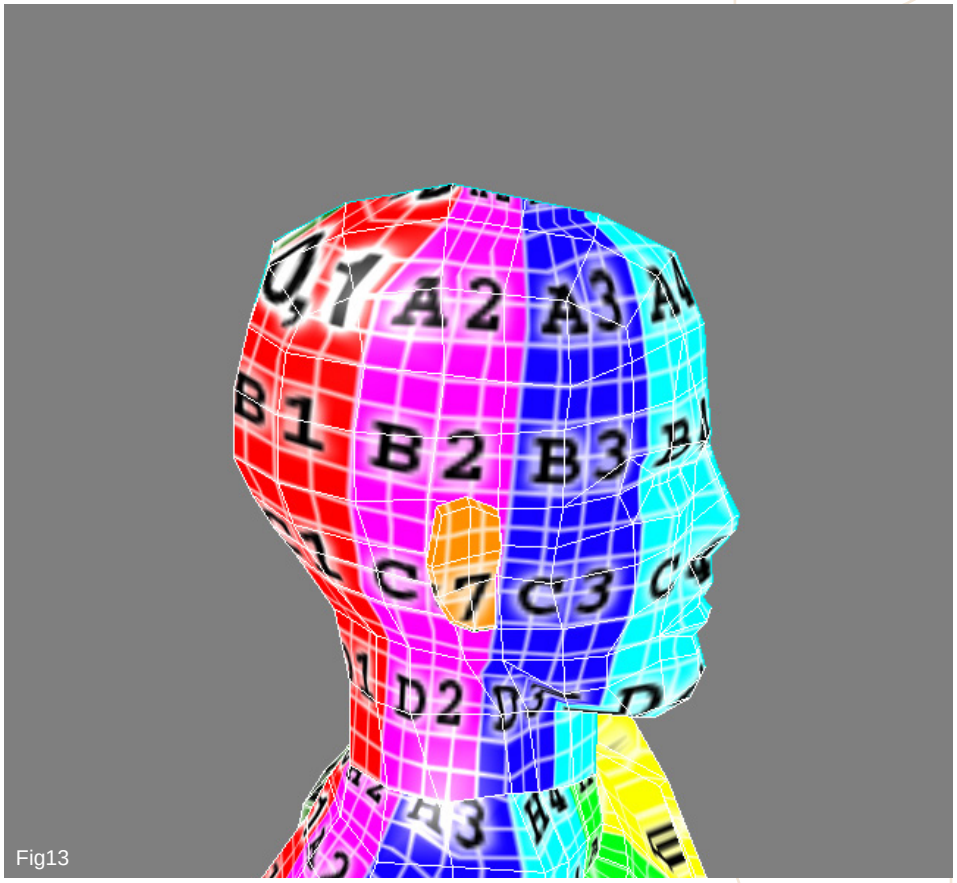


Fig13

14. We can now select the polygons of half of the head and Extract (Keep) them, then mirror them on the X axis to have the other half of the head. But before we can re attach the two halves together, we need to mirror the texture coordinates in the Texture Editor, too. Select the new copy of head, open the Texture Editor and mirror the texture coordinates. Finally, use the Merge command to re attach the two halves. Open the Texture Editor again, put the two halves close to each other, select the central column of vertices and Heal them together, like shown in Fig14.

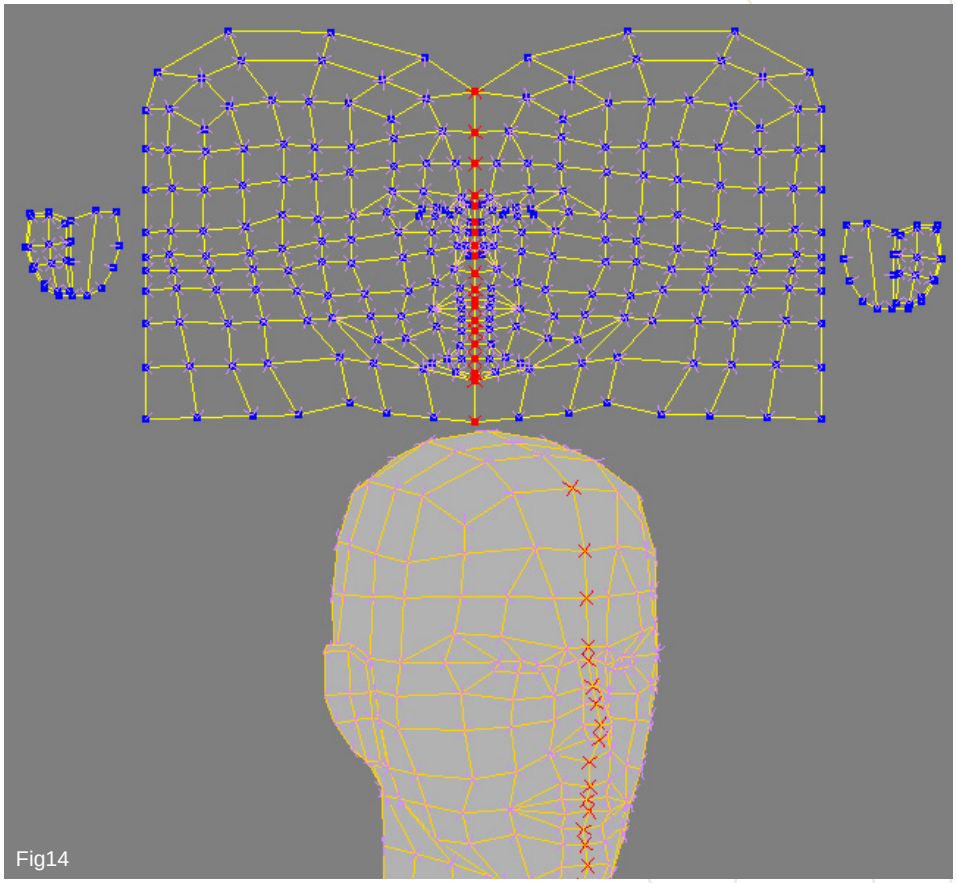


Fig14

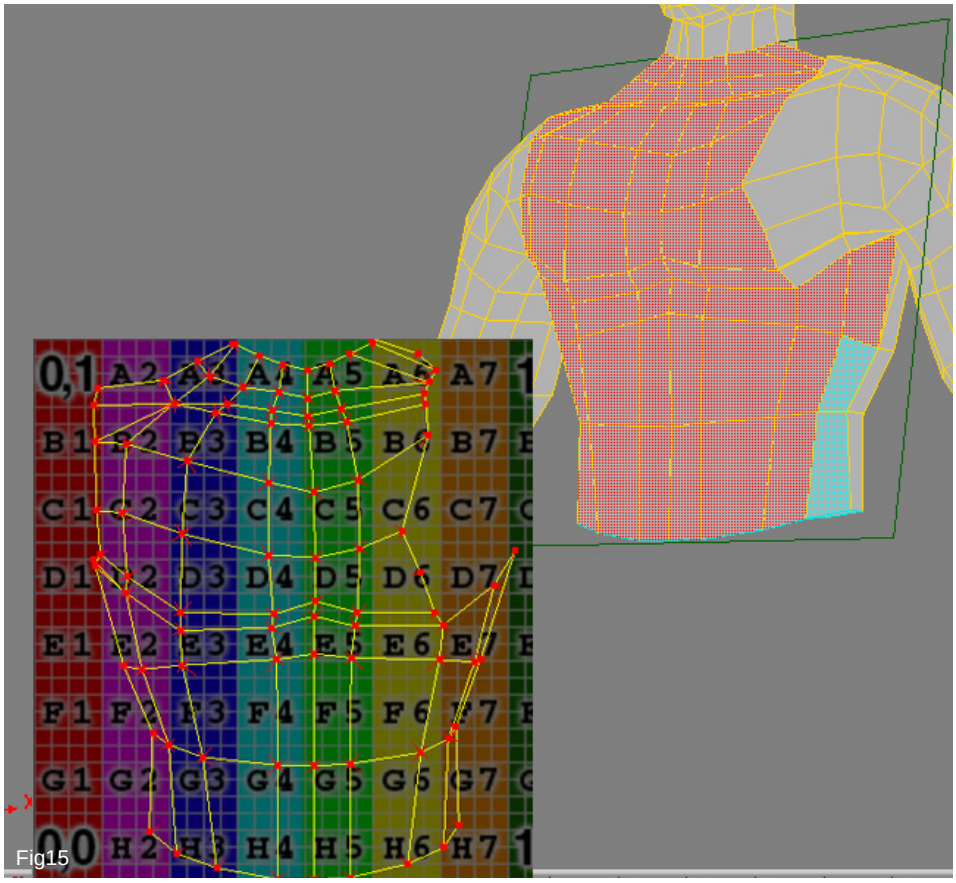
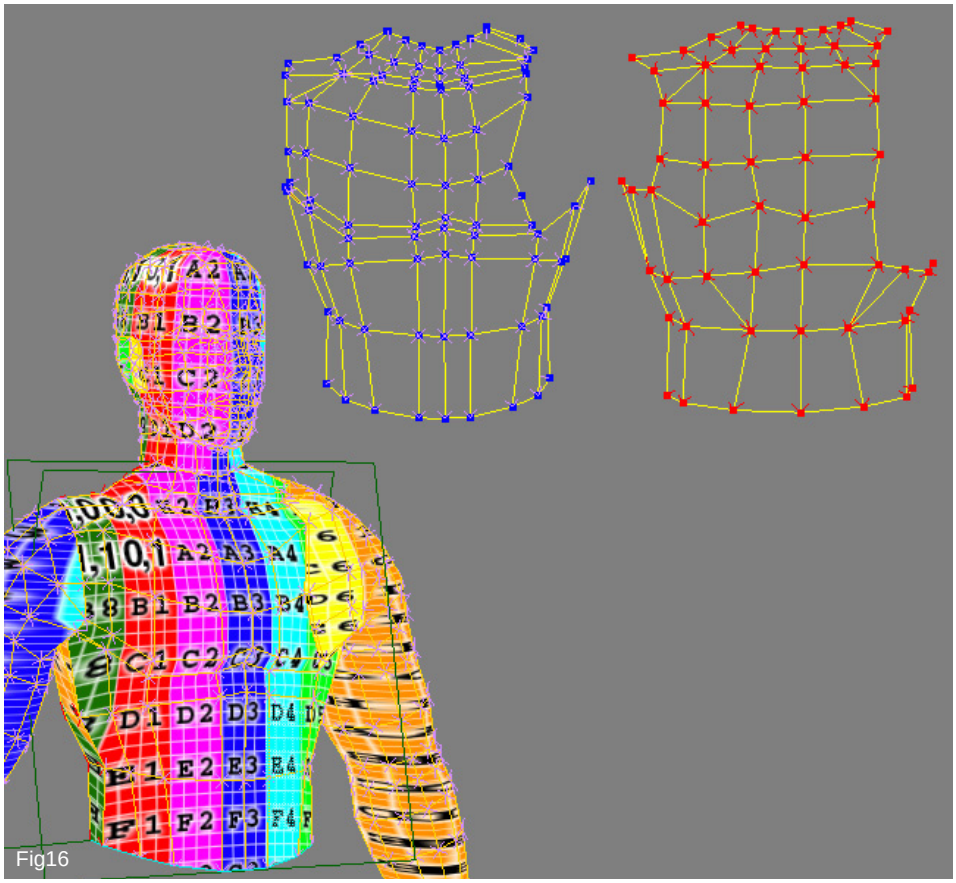
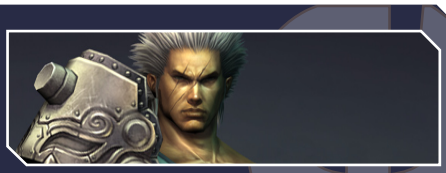


Fig15

15. Now we can move on to the torso area. Select the polygon as shown in Fig15 and apply a new planar sub-projection in the Texture Editor.


Fig16

16. Follow the same procedure for the back of the torso, then go into the Texture Editor and put the two parts of the torso close to each other, like shown in Fig16.



17. As you can see in Fig17, the two parts of the torso are put together with the Heal tool applied in the central column of vertices in the Texture Editor.

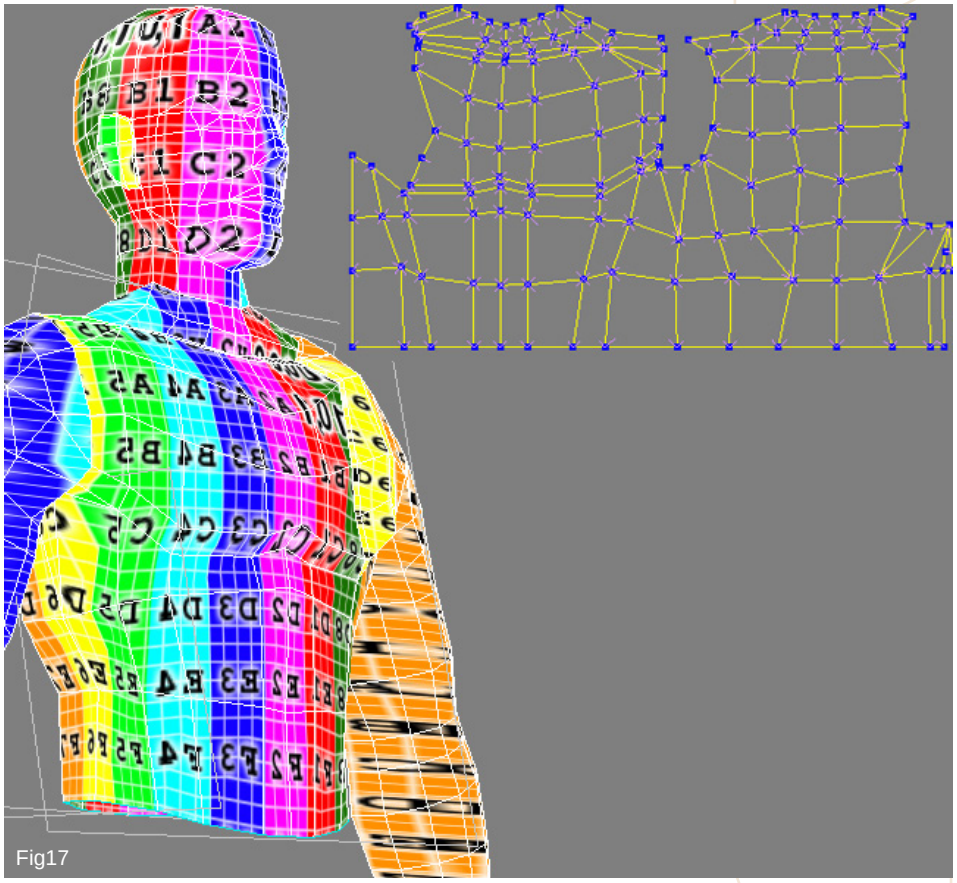


Fig17

18. Let's move on to the limbs. As you can see in Fig18, only one half of the legs were mapped. It is the same technique we used for the head. Keep only one half of the legs, map it, mirror it and its coordinates in the texture editor and re attach the two halves together.

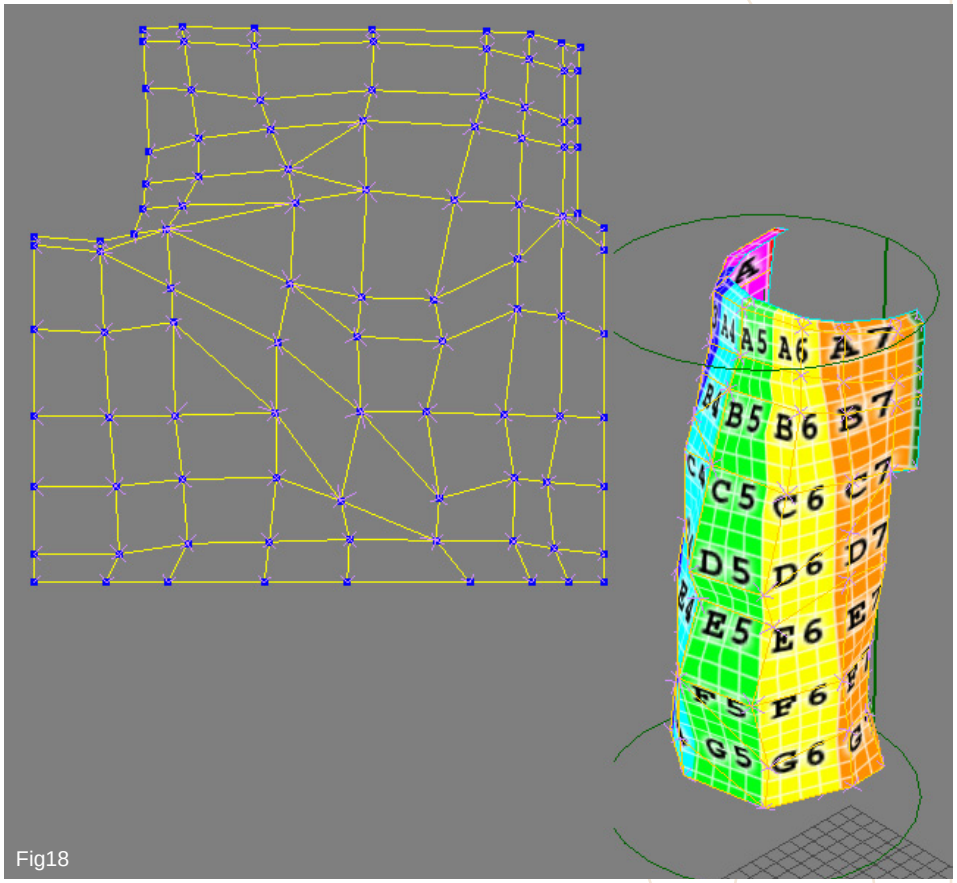


Fig18

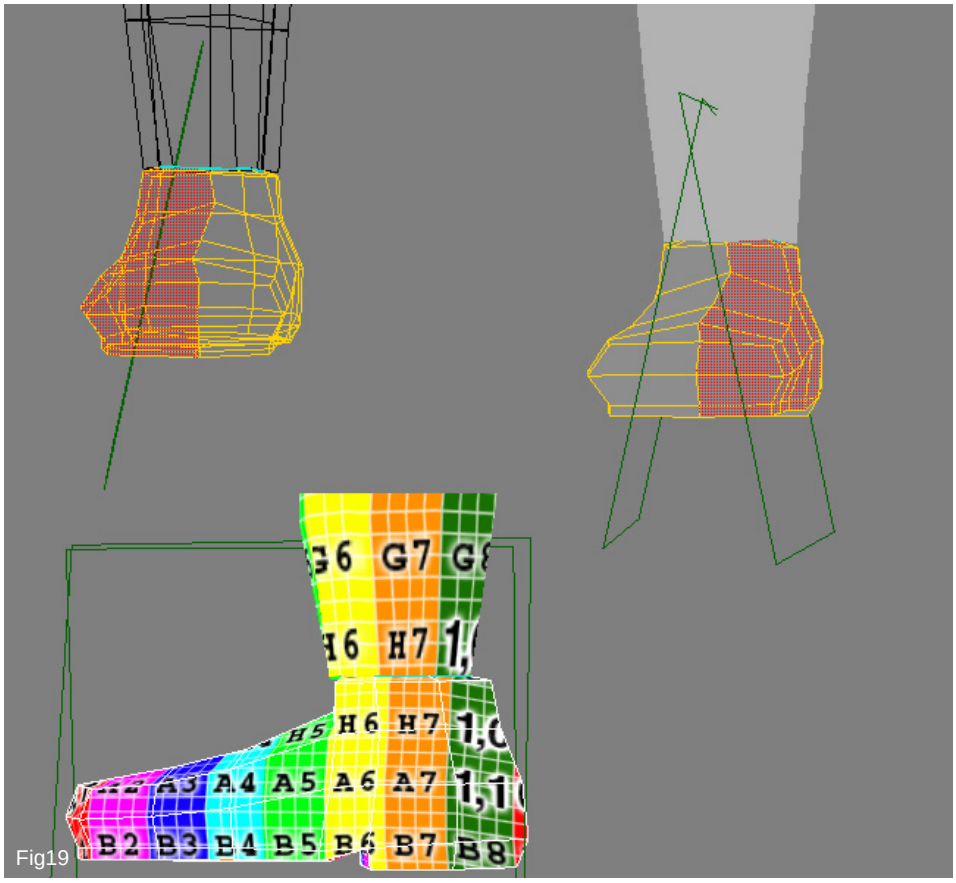


Fig19

19. You can still use the same procedure with the lower leg and the feet. Use a cylindrical projection for the lower leg, and two planar projections for each side of the foot, like shown in Fig19. You may need to rotate the planes of the planar projections to best fit the texture and avoid stretching.

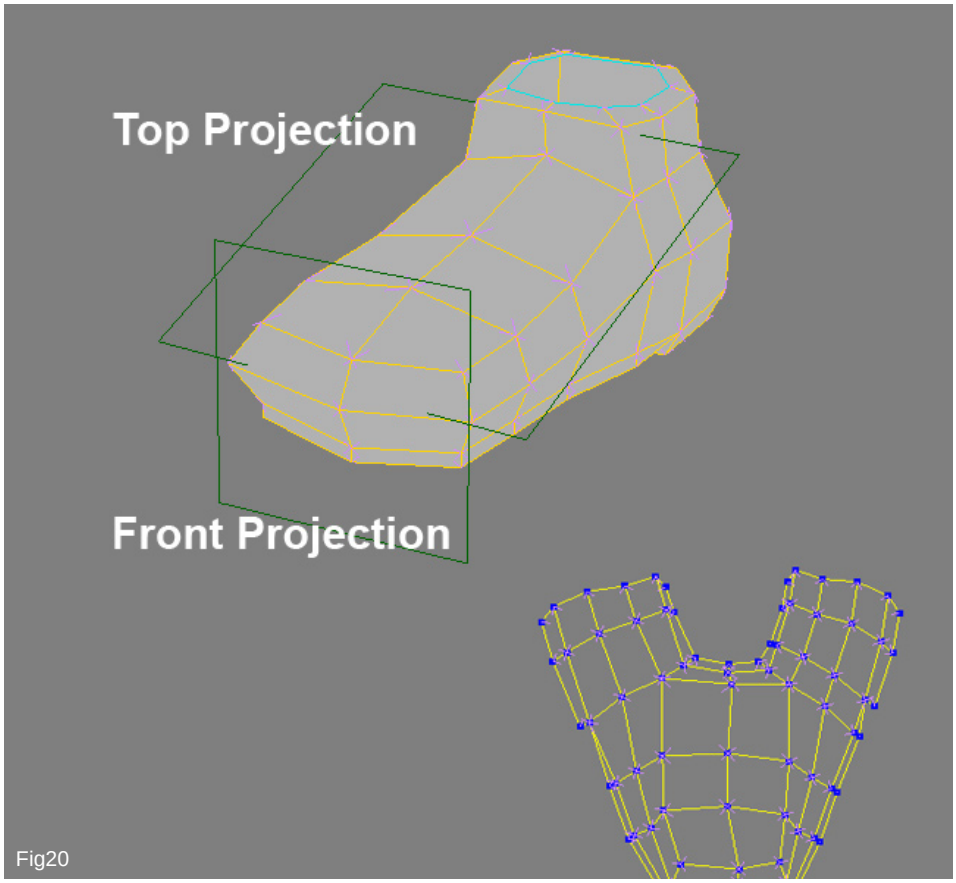
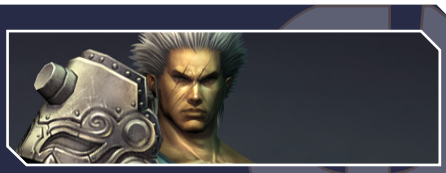


Fig20

20. Now apply two more sub-projection to the foot, one from the top and one from the front, as shown in Fig20. You will end up having 4 parts for the foot (two sides, one top and one front). Put them together with the heal tool.



21. Use a cylindrical sub-projection for the arm, like shown in Fig21. Probably you'll have to rotate the cylinder to make it fit better. Don't forget to rotate the cylinder so to have the seam in the inner part of the arm.

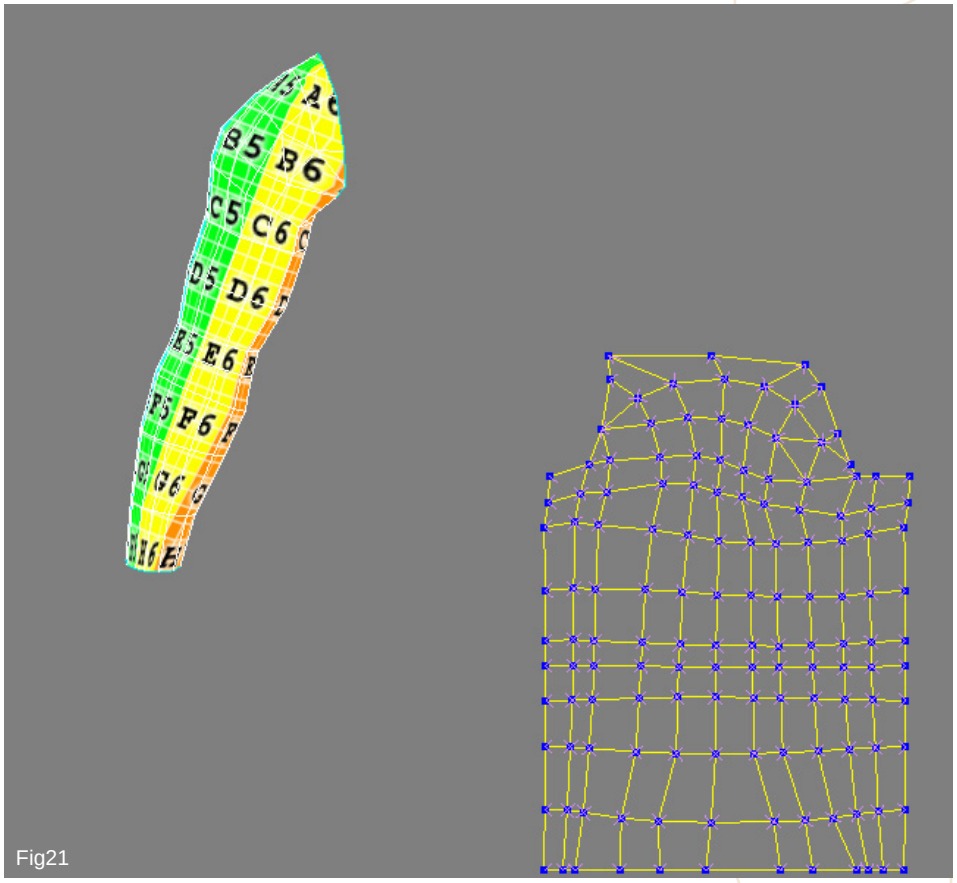


Fig21

22. As you can see in Fig22, all the seams are put in areas where it would be difficult to notice any texture or stretching problem.

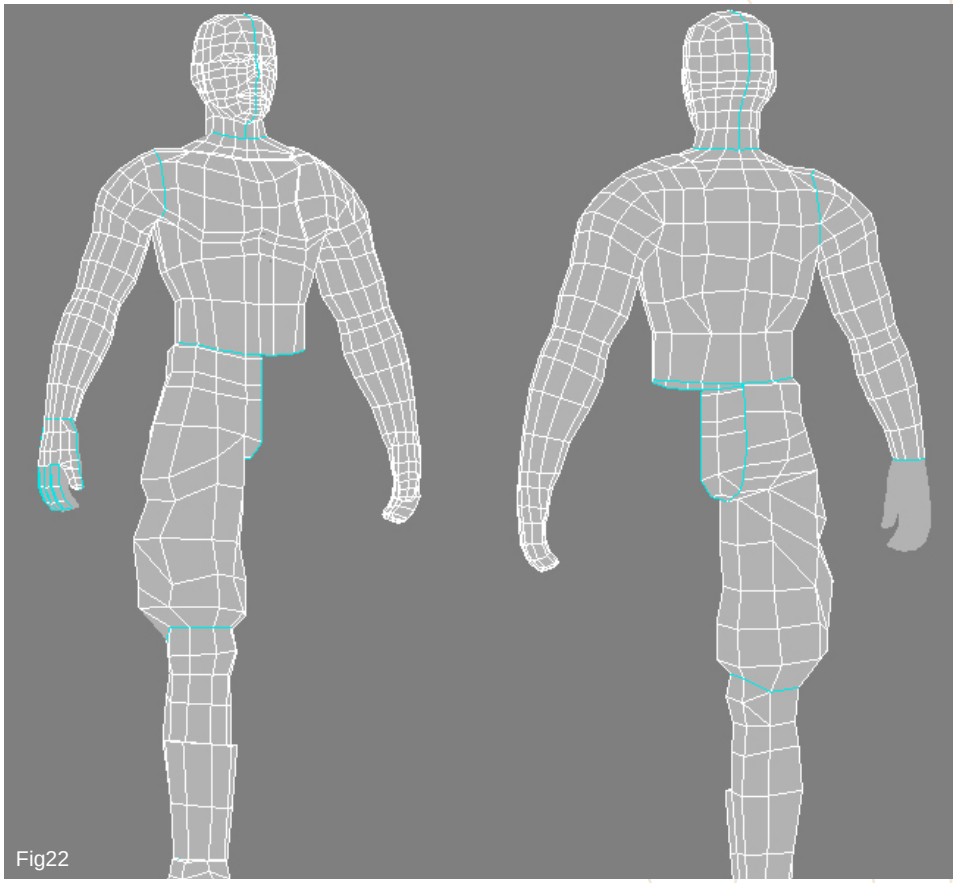


Fig22

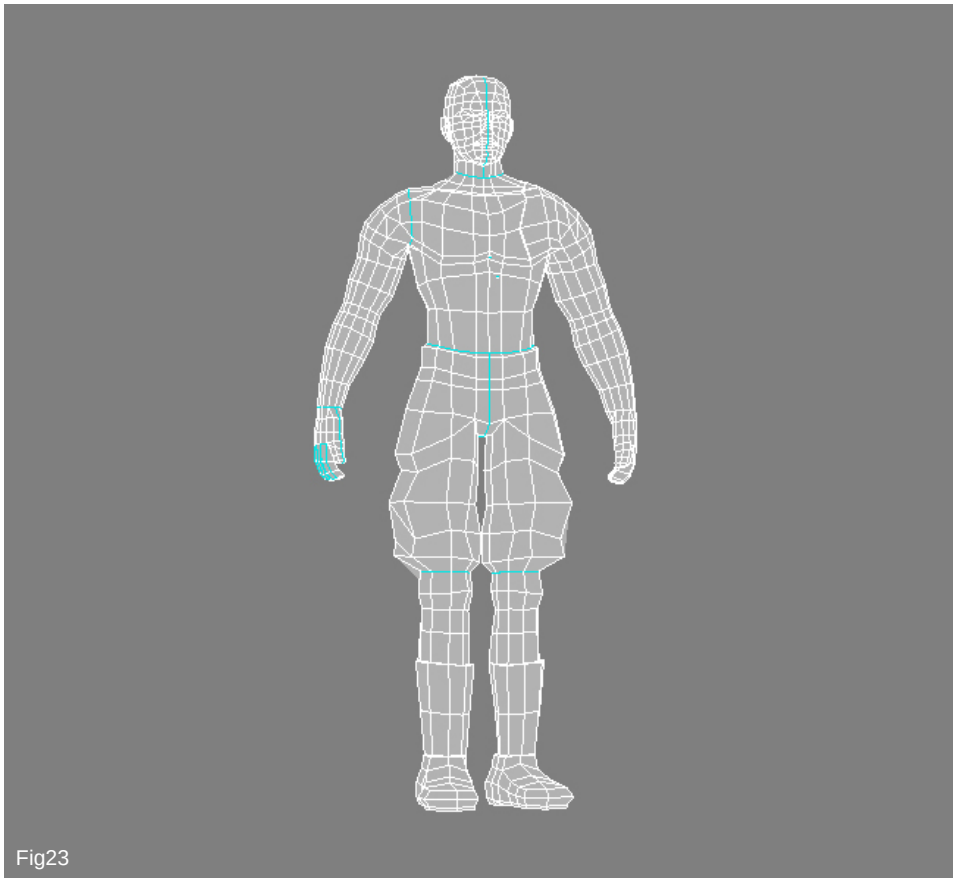


Fig23

23. Now we can start to mirror and attach all those parts who were mapped separately, like the hands, the leg, the foot.

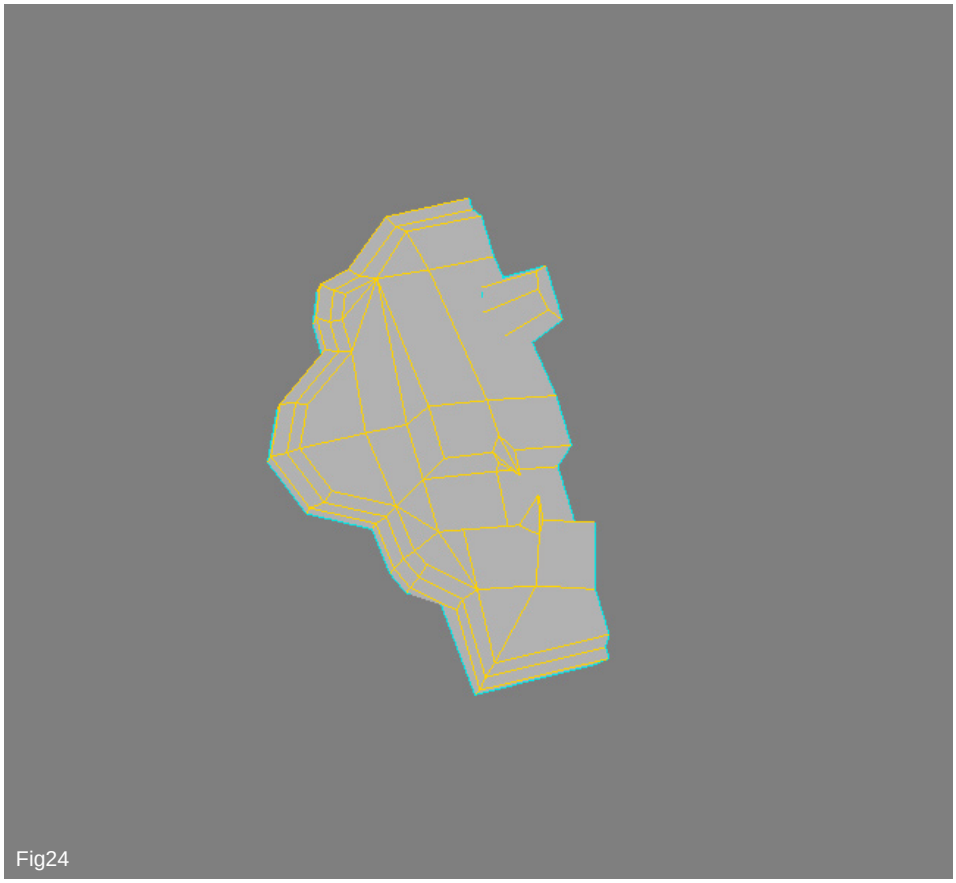
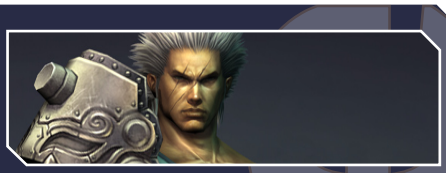


Fig24

24. Let's go on with the mapping of the armour pieces, and in particular with the shoulder armour. First of all, since it is symmetrical, delete half of it.



25. Now we can map both sides of the half with planar sub-projections, like shown in Fig25.

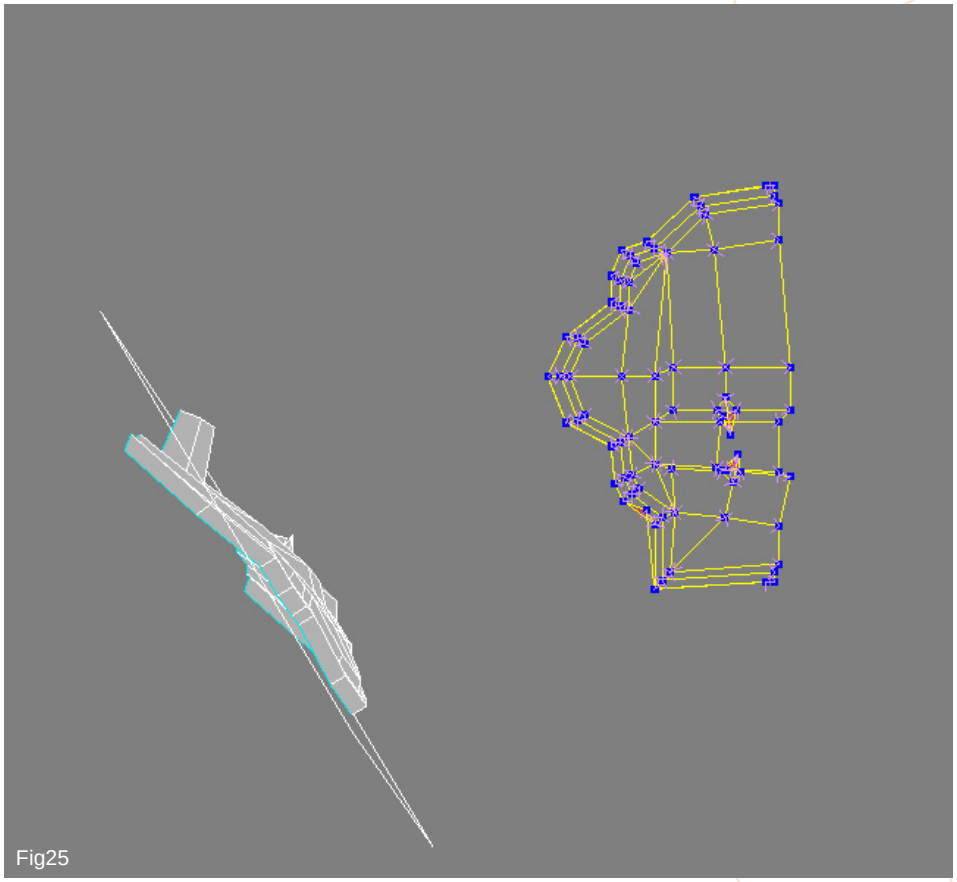


Fig25

26. You can create the mapping for the border of the shoulder armour with the ContourStretch sub-projections, as shown in Fig26. The icon of this tool is marked with the white arrow. Once you're done, just duplicate the half and merge the two parts together.

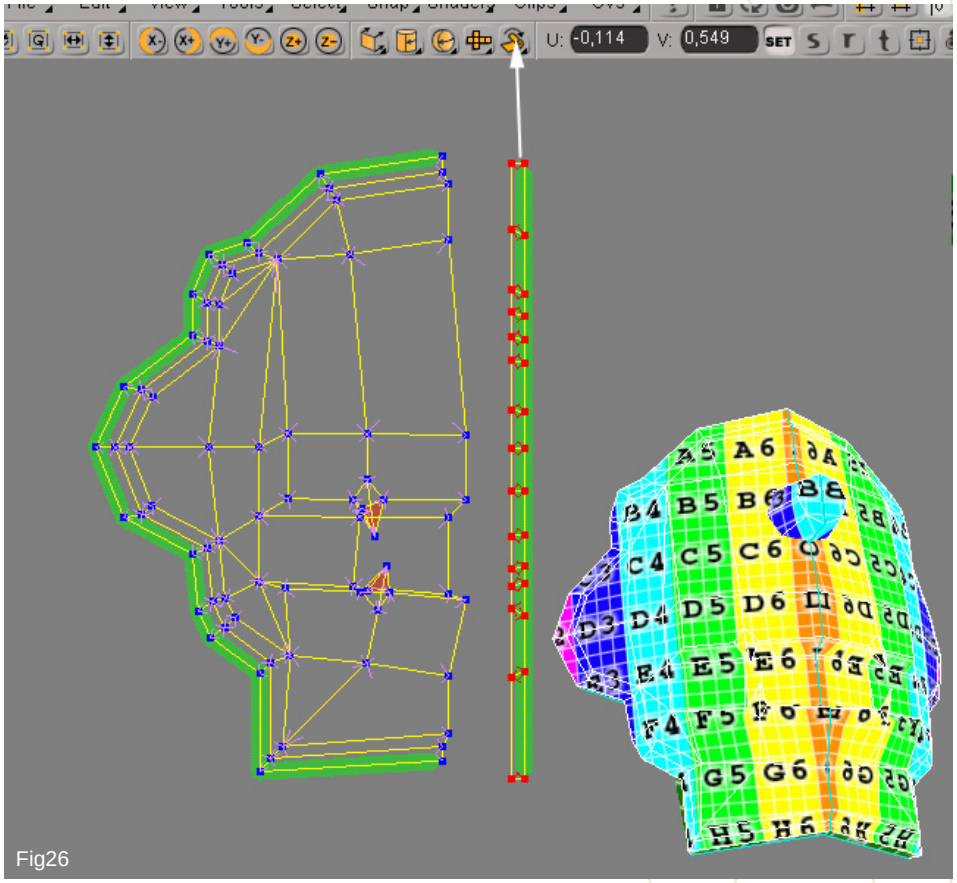


Fig26

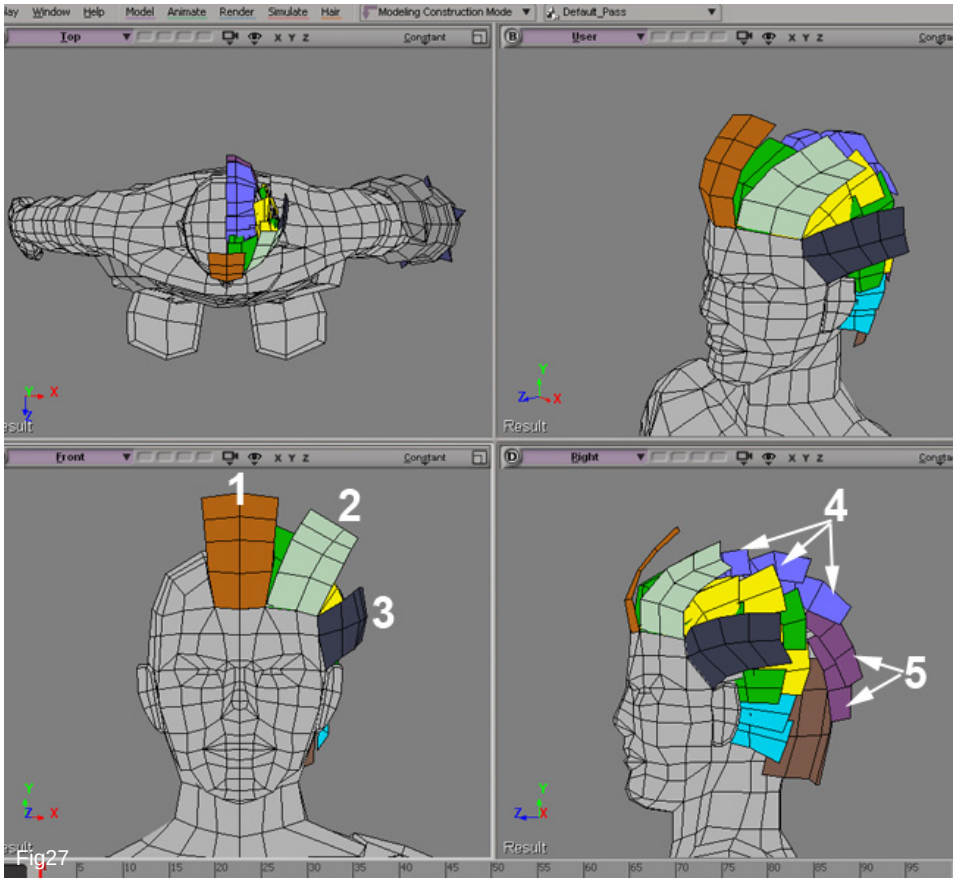


Fig27

27. Once you have mapped the hair section, you can attach the front three strands of hair to the main body, as shown in Fig28, leaving the rest of the hair as separated meshes. We'll see the reason of this later on.

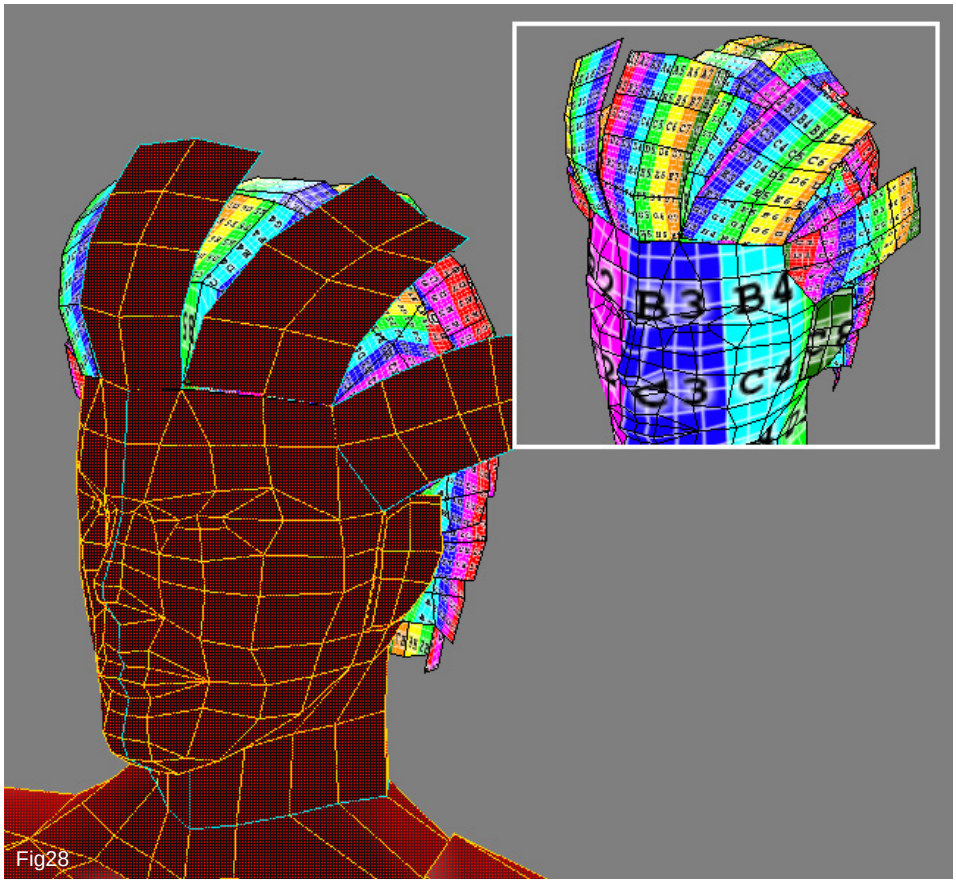
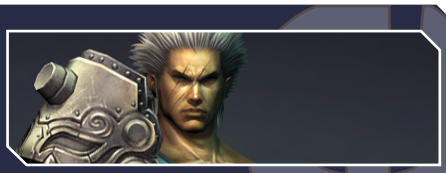


Fig28

28. Let's go back to the Texture Editor and see if we can optimize the mapping coordinates to make more room for important parts of the mesh. For example, you can select the coordinates marked in red in Fig29, detach them, flip them, and put them over the other half. This can be done since this area of the mesh will not be much visible (it will be mainly hidden by the hair). In this way, we can save room for parts of the mesh that deserve more importance.



29. Once the mapping session is complete, we can start assigning different materials for each significant part of the model (for example: hair, skin, clothing, etc.).

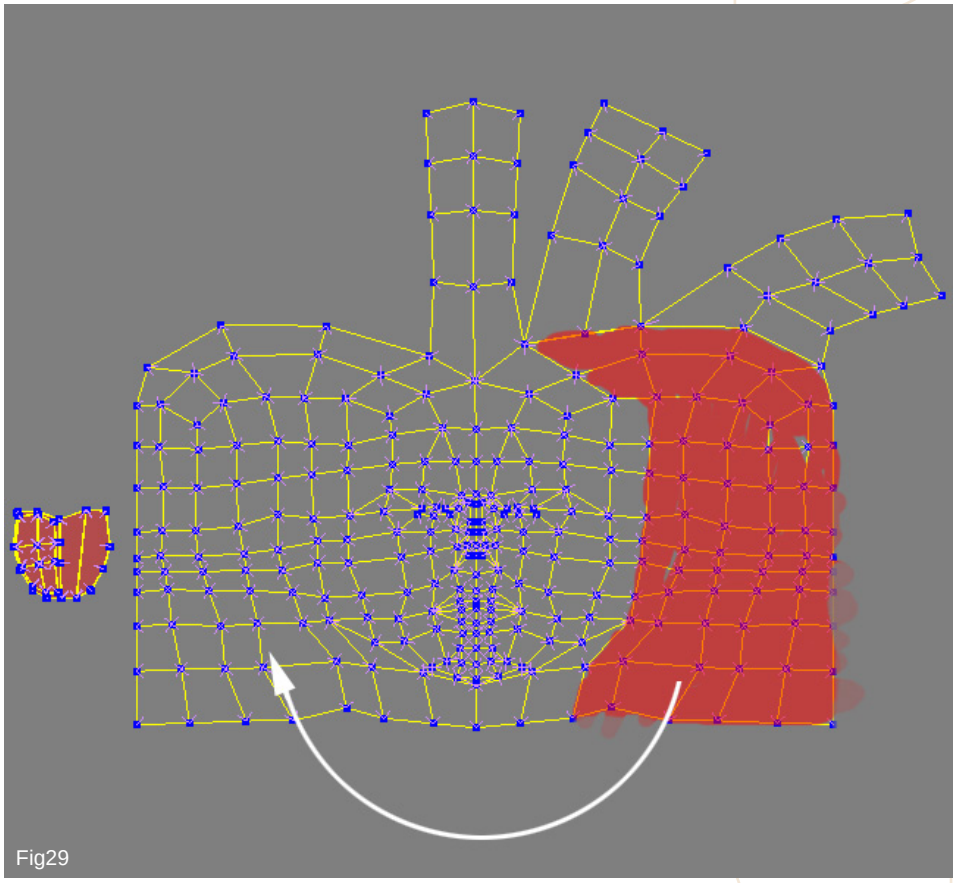


Fig29

30. When you are done, just go into the Texture Editor and use the Stamp UV Mesh command to save the texture coordinates template as an image file. You can then open this file into your favourite 2D painting program and start to paint the real texture for your character.

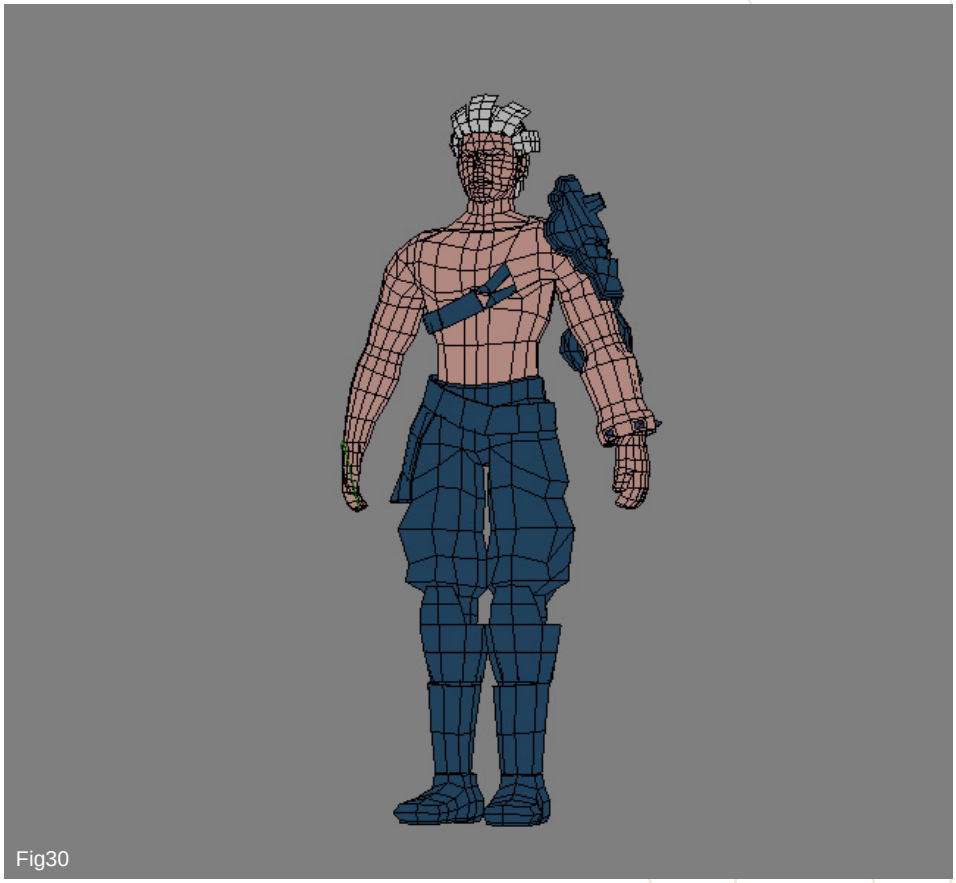


Fig30

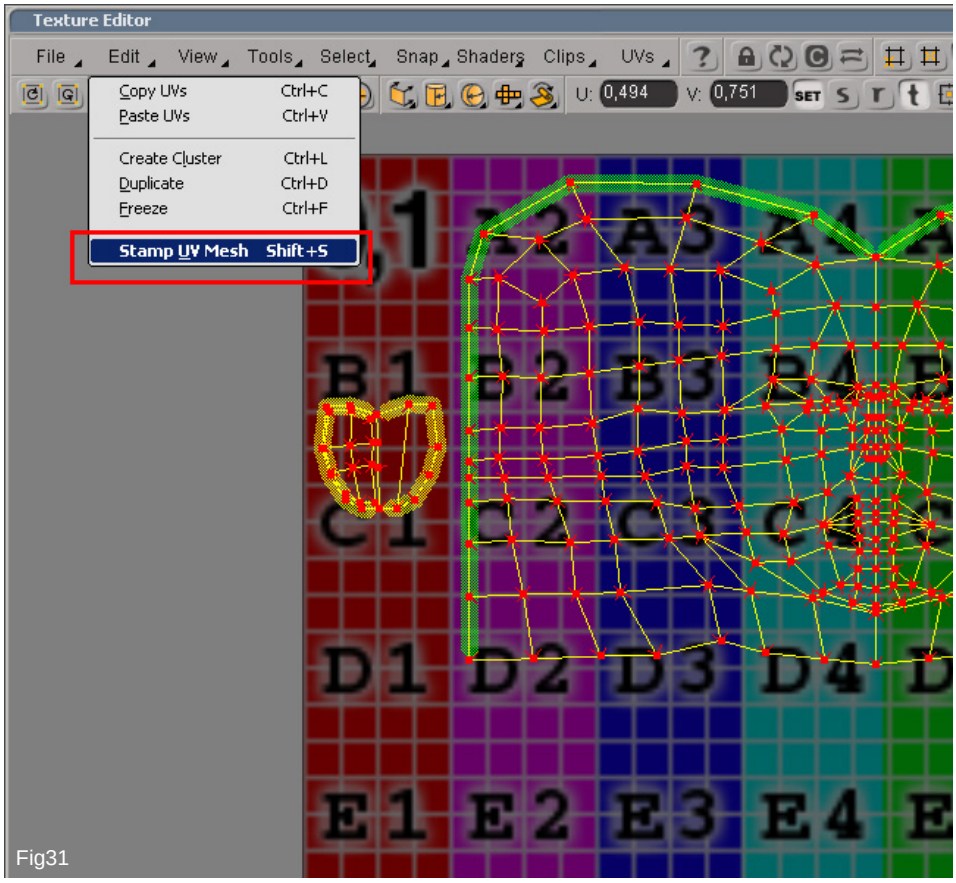


Fig31

31. As shown in Fig32, the Stamp UV Mesh command will ask you if you want to change the current clip shown in the Texture Editor with the newly created texture image with the coordinates' template. If you answer "Yes", it will be updated and shown in the Texture Editor as a clip.

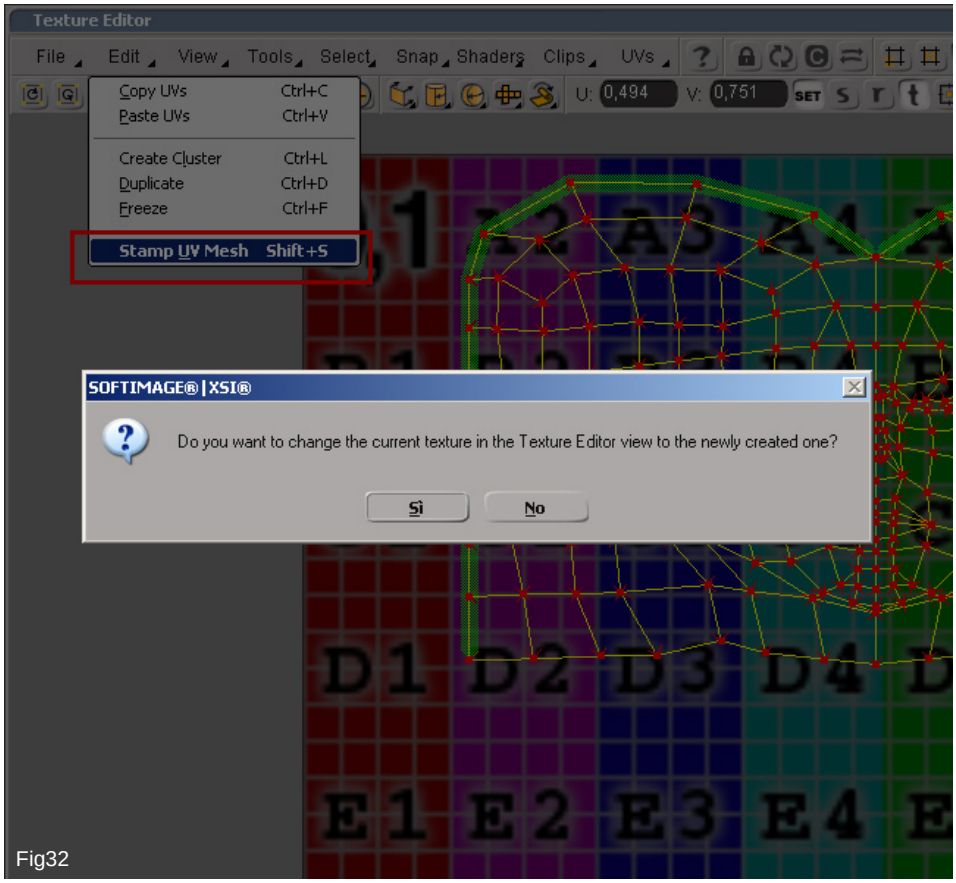
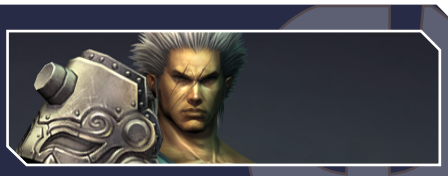


Fig32

32. Don't forget that the Stamp UV Mesh just stamps the template along with the clip currently shown in the Texture Editor. This means that if you are currently seeing your coordinates over the noIcon_pic1 texture image, this will be shown in your new texture file. To avoid this, just create a plain new texture file with a black background, assign it to the material and use that as a background for your coordinates template, like shown in Fig32.



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